

**Board of Education
Newtown, Connecticut**

Minutes of the Board of Education meeting on December 16, 2014 in the council chambers,
3 Primrose Street.

K. Alexander, Chair	J. Erardi
L. Roche, Vice Chair	L. Gejda
K. Hamilton, Secretary	Staff
D. Leidlein	Public
J. Vouros	Press
D. Freedman	
M. Ku	

Item 1 – Call to Order

Mr. Alexander called the meeting to order at 7:04 p.m.

MOTION: Mrs. Roche moved that the Board of Education enter into executive session to discuss and update on nurses and paraeducators negotiations, the security grant, and a Newtown High School student matter and invited Dr. Erardi, Dr. Gejda and Mr. Bienkowski Motion passes unanimously.

Item 2 – Executive Session

The Board exited executive session at 7:40 p.m.

Mr. Alexander requested a moment of silence after the pledge in memory of Sandy Hook School.

Item 3 – Public Session/Pledge of Allegiance

Michelle Hiscavich introduced Brian Kowalsky, Hawley third grade chorus director, and his students who say two songs from their winter concert.

MOTION: Ms. Hamilton moved to add an item to old business for a brief discussion on the transportation information they received and how we want to move forward. Mrs. Leidlein seconded. Motion passes unanimously.

Item 4 – Consent Agenda

MOTION: Mr. Vouros moved that the Board of Education approve the consent agenda which includes the minutes of December 2, 2014, the high school field trip to Medieval Times, the donation to Sandy Hook School and the resignation of Brandi Oatis. Mrs. Leidlein seconded. Motion passes unanimously.

Item 5 – Public Participation - none

Item 6 – Reports

Superintendent's Report:

Dr. Erardi spoke about the informational meeting on January 21 at Reed Intermediate School which will discuss the Newtown math programs. On January 28 at 2:30 p.m. he will have an informational community forum for seniors at the senior center.

December 18 the Commissioner will visit Newtown. He looked forward to sharing how proud he is to be part of the Newtown schools and was expected to visit one or two schools.

Dr. Erardi introduced two high school students who will be attending the meetings. Megan Milano is a senior and Riland Abazi is a junior. The each provided information on events at the high school last week.

Chair Report:

Mr. Alexander attended the Legislative Council meeting where he answered questions about the CIP. Mrs. Roche worked with Joanne Morris to allow the public to subscribe to Board agendas. Mr. Alexander went to the Sandy Hook fourth grade concert and encouraged Board members to attend these enjoyable events.

Committee Reports:

Mrs. Ku spoke about discussions at the Curriculum and Instruction Committee meeting which included the culinary program and the visit to South End School in Southington to observe their world language program. The calendars were also discussed as well as the legislation requiring an increase in credits for high school graduation.

Mr. Alexander said the Communications Committee met regarding the Board newsletter and distribution.

Mrs. Roche stated the Climate and Culture Committee met and are still in the analyzing phase of the teacher survey and they also discussed the calendar.

Ms. Hamilton was invited to attend private meetings that two senior communities organized. One was the Regency where only ten attended. The other was at Liberty where 42 attended. Similar information was discussed from previous meetings as well as challenges the district has.

Mr. Vouros asked if they expressed any interest in the education of our children.

Ms. Hamilton said they were more interested in senior tax relief, sewers, traffic, and finances of the town.

Mr. Freedman said he is the representative for Hawley School and he attended the coffee on December 11 where the subject was supporting students academically and behaviorally.

NICE report:

Dr. Erardi introduced the NICE executive Board, Elizabeth Ward-Toller, Tim Dejulio and Jen Davidson, who presented their strategic plan for the program. They would like to strengthen the existing program and expand into all schools and the community. They requested support from the Board of Education regarding curriculum writing for an international studies course and stipends for the NICE executive board and building liaisons.

Mr. Freedman asked if they considered a community service component.

Mr. Dejulio said that would be part of the world language honor society.

Mr. Freedman said there are organizations that can be a resource for programs that are cross cultural. He asked if they had any financial models of costs from other districts.

Mr. Dejulio said we don't because we are the only program like this in the state.

Mr. Freedman asked the amount of time the executive board worked.

Ms. Ward-Toller said the executive board represents each country and works at least 3 hours per week. Someone else takes care of the financial logistics of traveling. We would also like a community outreach person.

Ms. Hamilton asked if they reached out to the PTAs.

Lisa Berger said she attended a PTA president's meeting last spring. They would like the administration in each school to help get parents interested.

Mr. Alexander asked if there were high school students interested in working with the elementary students.

Mr. Dejulio said there were and it was initially brought up by the students.

Dr. Erardi thanked these teachers for their exceptional dedication to the students and the program. He will provide financial information to the Board. We are looking to support this moving forward.

Financial Report:

MOTION: Mrs. Leidlein moved that the Board of Education approve the financial report and transfers for the month ending November 30, 2014. Ms. Hamilton seconded.

Mr. Bienkowski presented the financial report. The budget is very tight at this point and he is hoping that the excess cost grant will be higher than 75%. Transfers were also recommended.

Mr. Freedman asked if there was anything we could do to pre-empt some of the additional unexpected costs.

Dr. Erardi said they were meeting tomorrow to discuss a balanced budget. There are line items we control. During December if we need a freeze we will bring it to the board. We have to be careful moving forward.

Motion passes unanimously.

Item 7 – Old Business

2015-2016 School Calendars:

Dr. Erardi referred to the additional draft calendars showing two professional development days with two-hour late openings instead of early dismissals. The final calendars will be recommended in January.

Board of Education Standing Committees:

MOTION: Mr. Freedman moved that the Board of Education approve the Board of Education Standing Committees. Mrs. Leidlein seconded. Motion passes unanimously.

Kathy asked these to be included in the minutes.

Transportation Discussion:

MOTION: Ms. Hamilton moved that the Finance Committee look at the current tiers for bus transportation and have a more in-depth discussion on whether to move forward with hiring a consultant. Mr. Freedman seconded.

Ms. Hamilton wanted the Board to endorse looking at this as we need to better understand the information from All-Star and the business office.

Mr. Vouros asked if we had to hire a consultant to do this.

Ms. Hamilton said that when All-Star was hired one of the benefits was that the district would no longer be in the transportation business because they had all of the equipment and staff to make the decisions. She was not sure why we would need a consultant when it's the bus company's responsibility.

Dr. Erardi thought it was important to save money with the elimination of some buses but the additional dollars to extend the drivers day should be brought to finance subcommittee to bring to the Board. There's a lot that goes into changing tiers but the Board needs to bring to a close what their comfort level would be.

Ms. Hamilton wanted to be sure the Board was comfortable with the committee looking at it.

Mr. Alexander said it would be a public meeting including Dr. Erardi and Mr. Bienkowski.

Motion passes unanimously.

Item 8 – New Business

Grade 7 Math, Grade 7 Accelerated Math and Grade 8 Math Curricula:

Dr. Gejda introduced Jeanne Cavallaro, middle school math teacher and curriculum coordinator. She stated that they have been working with this curriculum for three years and it is still changing.

Mrs. Leidlein was concerned that we are not challenging enough eighth graders, limiting the number of students taking Algebra in that grade and not stretching students on the border.

Ms. Hamilton had the same concern. There is no ability to cross over once you're in the track. The students are not being stretched.

Mrs. Cavallaro said a student is never locked out of grade 7 accelerated math to grade 8 algebra. Some students don't want to take them. In terms of grade 6 into grade 7, we get a lot of information from Reed for placement. It's not a quota system.

Ms. Leidlein asked how parents work with the system to get the best outcome for their student.

Mrs. Cavallaro said this has to be addressed with the science department at the high school.

The requirements for the high school science program continually change. Only students with a 93 in algebra can take honors biology.

Dr. Gejda would prepare a report on this.

Dr. Erardi said we would come back to the Board on at what point a parent can override classroom identification.

Mrs. Leidlein said there are times when parents have not been able to override. What they take in math correlates to what they can take in science.

Dr. Gejda asked that any Board questions on the curriculum be sent to her.

Communications Committee:

MOTION: Mr. Vouros moved that the Board of Education authorize the Communications Committee to continue to issue information on behalf of the Board of Education. Mr. Freedman seconded.

Mr. Alexander is trying to get the newsletter out before next meeting for the public to attend the budget presentation.

Mrs. Leidlein suggested links to budget information on our website.

Motion passes unanimously.

Item 9 – Public Participation – none

MOTION: Mrs. Roche moved to support the superintendent's recommendation regarding discipline pertaining to student 2014-2015-01. Mrs. Leidlein seconded. Motion passes unanimously.

MOTION: Mr. Freedman moved to adjourn. Mr. Vouros seconded. Motion passes unanimously.

Item 10 – Adjournment

The meeting adjourned at 9:58 p.m.

Respectfully submitted:

Kathryn Hamilton
Secretary



FIELD TRIP BUS REQUEST FORM

Teacher Making Request: Anthony Metz Date: 11/19/14

Other Staff Involved: J. Metz, Lisa Meyer, Larry Saladin

Date of Proposed Field Trip: 1/23/15

Class/Group Involved: 9th grade Western Studies students

Number of Students Scheduled to Make Trip: 100+ - ?

Other Adults (non-teachers) Chaperoning the Trip (list names): T.B.D per student attendance

Destination: Lyndhurst, NJ Medieval times

Place and Time of Departure: NHS 7:30 Am

Estimated Time of Return: 3PM

Special Arrangements (i.e. stopping at a restaurant, picnic, etc.) _____

Estimated Cost of Transportation: \$ 1298 per bus

Estimated Cost per Student: \$70 includes BUS, show, + meal

Other Information: _____

PRINCIPAL APPROVAL BY SIGNATURE: J. Rodriguez DATE: 11-21-14

OVERNIGHT/OUT-OF-STATE FIELD TRIP BOE APPROVAL: _____ DATE: _____

Billing Information

Bill to: _____

Pricing: _____ Hours @ _____ per hour = _____

_____ Miles @ _____ per mile = _____

Minimum Charge: _____

Total Charge per Bus: _____

Confirmation

Information taken by: _____ Date Confirmed: _____

Confirmed by: _____ Recorded in Book: _____

DONATIONS

To BOE for Approval on December 2, 2014

12/2/2014

SHES

C.Dupuis, Oakville, WA

\$100.00

Ck# 10604957

Total

\$ 100.00

\$ 100.00

SHES Library

Newtown Public
Schools

\$ -

\$ -

Middle Gate School

Total

\$ -

\$ -

NPS Teachers

\$ -

\$ 100.00

\$ 100.00

BOE Communications Report, 12/16/2014
Kathy Hamilton, Board of Education Secretary

From	Date	Description
Bernard and Sarah Findley	12/5/2014	Cost of Girls Golf
Thomas E. Barrett	12/6/2014	School Safety and Security
Joseph Smith	12/10/2014	Website Improvement
Leslie Gunn	12/10/2014	Teacher Retirement Package
Scott Middlemiss	12/10/2014	SHS Donation

DEC 15 2014

ADDITIONAL CONSENT AGENDA ITEM

December 12, 2014

Dr. Joseph Erardi
Newtown Public Schools
3 Primrose Street
Newtown, CT 06470

Dear Dr. Erardi:

I am writing to inform you that I am resigning from my fourth grade teaching position at Hawley School. My husband, an engineer at Sikorsky Aircraft, has been relocated to Sikorsky's flight test facility outside of West Palm Beach, Florida. He reports to work at this new location on January 5, 2015.

I would request that you waive the forty-five school day notice so that I may relocate to Florida with my family, including our two small children, aged four and two. I also have accepted a Kindergarten teaching position at Palm Pointe Educational Research School in Tradition, Florida. I would like to begin the new year with my new class.

I began my teaching career at Hawley as a bright-eyed college graduate thirteen and a half years ago. It is with great sadness that I leave Newtown. I will miss my Hawley family tremendously, and will take all that I have learned in Newtown with me.

Sincerely,



Brandi Oatis
Fourth Grade Teacher
Hawley School

Administrative Report

December 16, 2014

1. Math Night: Wednesday, January 21st 7:00 P.M. RIS

2. Community Forum: "Senior Forum" Wednesday, January 28th 2:30 p.m.

3. Commissioner of Education Visit Thursday, December 18th

4. Student Representatives:
 - a. Megan Milano Class of 2015
 - b. Riland Abazi Class of 2016

Save the Date

Focus on Teaching and Learning:
“Mathematics”



Topics being planned for discussion:

*Newtown Math Programs, Resources, Instruction
Strategies to help your child problem solve
Hands on/Minds on Activities*

Time: 7:00 – 8:00 PM

Date: January 21, 2015 (Snowdate: January 29, 2015)

Location: Reed Intermediate School Library Media Center



NICE

Newtown International Center for Education

Strategic Plan



It is Our Responsibility to Prepare Our Children for Their World

Vision

- Develop a Nationally Recognized International Education and Preparedness Program at the K-12 Level for Newtown Public Schools
 - Student Learning and Real World Experience
 - Professional Development and International Experience for Educators
 - Community Outreach



Objectives

- Maintain and Strengthen Existing Program
 - Sister-schools in France, China and Spain



- Japan Program
- NICE Club
- Community Events
- Expand NICE Program into All Schools
- Connect NICE with Additional Countries

NICE Strategic Plan

2014-2015

District

- Present NICE Challenge to Aspiring Administrators Dec. 2014
- Meet with Senior Leadership Team Jan. 2015 to Discuss Ways to Promote International Learning in Each School
 - Establish NICE Building Liaisons
- Work with Curriculum Committee to Include Cultural Awareness
- Collaborate with PTSAs to Bring Cultural Programs to Students
- Increase BOE and Central Office Participation in NICE Events

NICE Strategic Plan

2014-2015

High School

- Portfolio Project for Study Tour Participants
- Develop Curriculum for 2015-16 Study Tour Pilot Program
- Recognition for NICE Exemplar Student Ambassadors
 - Certificate/Pin at Graduation
- Engage Additional Staff to Become Involved in NICE Program

NICE Strategic Plan

2014-2015

Other Schools

- NHS Student-led NICE Awareness Campaign to Increase Involvement
- Delegation Visits
- District Support of Before School/After School Language Programs
- Evaluation of Existing International Learning Initiatives
- Development of NICE Program by Building Liaison and Staff
 - NICE Club, Language Classes, Pen/Photo Pal Programs

NICE Strategic Plan

2015-2016 New Initiatives

District

- Development of NICE District Committee to Include NICE Executive Council and Building Liaisons
- Semi-annual Meetings of Entire NICE District Team (Administrators, Teachers, Liaisons, Chaperones, Support Staff)
- Continued Expansion of Scope of NICE Program Throughout District and Community

NICE Strategic Plan

2015-2016 New Initiatives

High School

- Pilot NICE Curriculum with Study Tour Participants
- Finalize Curriculum for Credit Bearing International Studies Course
- Create Course Description for Program of Studies
 - 2016-17 for Study Tour Participants/2017-18 for all Students

Other Schools

- Work with NICE Building Liaisons to Roll Out International Program
 - NICE Club, Language Classes, Pen/Photo Pal Programs

NICE Strategic Plan

2016 and Beyond

District

- Summer Language Institute
- Cultural Awareness Ingrained in Curriculum K-12

High School

- Roll out International Studies Course for Study Tour Participants
 - 2016-17 for Study Tour Participants/2017-18 for All Students
- Expansion of Study Tours to Other Countries
- Additional NICE Community Events

Other Schools

- K-6 Language Programs

Support Needed from BOE

NICE Executive Board Stipends

- 5 Positions
 - Oversees All Aspects of Planning, Implementation and Financing of NICE Programs, Including Sister School Exchanges and Cultural Community Events

Curriculum Hours

- 48 Hours total (12 hours x 4 people)
 - To Write Curriculum for International Studies Course

Building Liaisons Stipends

- 7 Positions (1 per school)
 - Coordinates Planning and Implementation of NICE Cultural Programs in Respective Schools



“We Bring the World to Newtown
and
Newtown
to the World”



**NEWTOWN BOARD OF EDUCATION
MONTHLY FINANCIAL REPORT
NOVEMBER 30, 2014**

SUMMARY

The fifth financial report of the 2014-15 fiscal year to date is attached. In the month of November, the Board of Education spent approximately \$5M; \$3.6M on salaries, \$1.4M for all other objects.

This report includes “Anticipated Obligations” which reflect the best current estimate for expenditures beyond active encumbrance. At this time the entries included here represent the estimated amounts for the offsetting receipts related to the excess cost and agency placement grants, based on the first estimate of what the districts’ expected expenses are, and that have been reported to the State on December 1st. The estimate is based on a reimbursement rate of 75% which is subject to change.

In many cases this column reflects the remaining budget balance, as expenditures are planned at this level. As further analysis and information becomes available these obligations will reflect more current estimates. The ‘Projected Balance’ is the result of the balance adjusted by the anticipated obligation. This reporting reflects the results of the grants which were estimated last month and will continue to be embedded in these obligations moving forward.

Following the monthly report is a new two page report that includes the excess cost and agency placement ‘Offsetting Revenue’. This is formatted in the same fashion as the financial with only the active object categories where the receipts are listed. The ‘Budget’ represents that which you saw last month in the anticipated column and the ‘Expected’ now represents that which was filed with the State on December 1st. The ‘Balance’ here indicates the differences between what was budgeted and what the current reality appears to be. You can note that all the ‘Expected Revenue’ is much less than what was budgeted last year with the exception of the Out of District tuition. This latter amount, based on more unbudgeted tuition placements, helps cover the reduced amounts in all other accounts with an overall estimated excess of \$14,353.

All of these amounts differ because our per pupil expenditure has risen significantly due to the federal grants we received, that have been added to our overall annual expenditures, along with the declining enrollment. The additional amount included in our last years’ end of year report included over \$2.7M in federal support related to the tragedy. The effect of this is that the excess cost threshold has risen to \$67,137 from \$60,456 and the per pupil cost for agency placed children is now \$14,919 versus \$13,435. When the first installment of this grant is ‘Received’ it will be included in the column so labeled with the balance to be received noted in the ‘Expected’ column. The balance will stay the same unless the percentage paid by the State changes.

All the main object accounts remain in a positive balance position for this month with the exception of ‘Other Purchased Services’ which includes the Out of District Tuition account. The excess cost will cover this shortfall.

There are transfers recommended this month included in an attached schedule following the offsetting revenue. This format was recommended by the Finance Sub Committee of the Board.

This budget is extremely lean and needs to be carefully monitored. Forecasting anticipated obligations will be ongoing from now on and will modify the balances required to end the fiscal year within the allotted budget.

EXPENSE CATEGORY CONDITIONS

100 SALARIES

The total salary budget is expected to be adequate to continue all the planned services for the balance of the year with a slight positive balance in certified salaries. In non-certified there is a shortage in Para Educators. Further needs since September have arisen due to significant behavioral needs in classrooms, new students moving into district and newly identified students (total of 48 between Oct. 1st 2013-Oct. 1st 2014 specifically 20 new students identified school year to date.) Playing into this Para need also is the fact that last years' budget was moving through the process while additional student needs were being met. Those needs continued without a concurrent budgetary adjustments.

200 EMPLOYEE BENEFITS

Current estimates are on track with a balance in medical due to a new provider for a lower cost for LTD insurance. Also the EAP (Employee Assistance Plan) and Worker's Compensations are tracking well.

300 PROFESSIONAL SERVICES

As predicted the increased legal activity has exceeded the districts' legal line. Outside evaluations are increasing at a steady rate so this object will be in need shortly.

400 PURCHASED PROPERTY SERVICES

This group of accounts provides services necessary to keep the buildings running, along with classrooms repairs and rentals. Several emergency repairs occurred at the schools including the following: Hawley - alarm repairs \$1,275; Sandy Hook School - intercom repair \$934, gym lighting \$819; Middle Gate - telephone repairs \$575, paging system \$857; Head O'Meadow - replace spill box on tank \$4,155, roof leaks \$2,167; Reed - fire doors \$1,500, playground equipment repair \$2,095, sidewalk repairs \$1,660; Middle School - leaking boiler \$4,600, gym backstops \$770; High School - tree removal \$1,200.

500 OTHER PURCHASED SERVICES

Insurance is \$5,548 over budget. With excess cost the Out of District Tuition account will be back in the black. This will need to be monitored should additional placements occur throughout the remainder of the year.

600 SUPPLIES

This group of accounts includes the electricity, gas, and fuel accounts which will be continually reviewed and revised as we participate in the heating season.

The district's 2nd year electricity supply account with Direct Energy at 7.769 cents per kilowatt expired on December 1st. We have secured an alternate provider Constellation, for the next eleven months at a rate of 9.680 cents per kilowatt. This is significantly below the estimated CL&P rate at 12.629 cents per kilowatt. At the new contract rate with Constellation our expected over expenditure will be in the area of \$75,000, far less than the previously feared \$178,133 to \$263,861. This contract will put us on track with the regional consortium and allow us membership in a very large group for a subsequent contract next November.

We do not have enough information on natural gas to make a reliable prediction at this time. Recent indicators however have shown moderating prices due to revised short term coldness forecasts.

700 PROPERTY

Current estimates continue to be on track with no change.

800 MISCELLANEOUS

Current estimates continue to be on track with no change.

The budget will continue to be carefully monitored as it is very tight and any subsequent issues or opportunities will be presented as necessary.

REVENUE

No revenues were received during the month of November.

Ron Bienkowski
Director of Business
December 11, 2014

TERMS AND DEFINITIONS

The Newtown Board of Education's Monthly Financial Report provides summary financial information in the following areas:

- Object Code – a service or commodity obtained as the result of a specific expenditure defined by eight categories: Salaries, Employee Benefits, Professional Services, Purchased Property Services, Other Purchased Services, Supplies, Property, and Miscellaneous.
- Expense Category – further defines the type of expense by Object Code
- Expended 2013-14 – actual (unaudited) expenditures of the prior fiscal year (for comparison purposes)
- Approved Budget – indicates the town approved financial plan used by the school district to achieve its goals and objectives.
- YTD Transfers - identified specific cross object codes requiring adjustments to provide adequate funding for the fiscal period. This includes all transfers made to date.
- Current Transfers – identifies the recommended cross object codes for current month action. (No current transfers indicated)
- Current Budget – adjusts the Approved Budget calculating adjustments (+ or -) from transfers to the identified object codes.
- Year-To-Date Expended – indicates the actual amount of cumulative expenditures processed by the school district through the month-end date indicated on the monthly budget summary report.
- Encumbered – indicates approved financial obligations of the school district as a result of employee salary contracts, purchasing agreements, purchase orders, or other identified obligations not processed for payment by the date indicated on the monthly budget summary report.
- Balance – calculates object code account balances, subtracting expenditures and encumbrances from the current budget amount, indicating unobligated balances or shortages.
- Anticipated Obligation – is a column which provides a method to forecast expense category fund balances that have not been approved via an encumbrance, but are anticipated to be expended or remain with an account balance to maintain the overall budget funding level. Receivable revenue (i.e., grants) are now included in this column which has the effect of netting the expected expenditure.

- Projected Balance – calculates the object code balances subtracting the Anticipated Obligations. These balances will move up and down as information is known and or decisions are anticipated or made about current and projected needs of the district.

The monthly budget summary report also provides financial information on the State of Connecticut grant reimbursement programs (Excess Cost and Agency Placement Grants and Magnet Grant Transportation). These reimbursement grants/programs are used to supplement local school district budget programs as follows:

Excess Cost Grant – this State of Connecticut reimbursement grant is used to support local school districts for education costs of identified special education students whose annual education costs exceed local prior year per pupil expenditure by 4 ½. Students placed by the Department of Child and Family services (DCF) are reimbursed after the school district has meet the prior year’s per pupil expenditure. School districts report these costs annually in December and March of each fiscal year. State of Connecticut grant calculations are determined by reimbursing eligible costs (60%-100%) based on the SDE grant allocation and all other town submittals. Current year receipts results from the state reporting done in December. We receive notice of what we are eligible for in early April.

Magnet Transportation Grant – provides reimbursement of \$1,300 for local students attending approved Magnet school programs. The budgeted grant is \$62,400 for this year while the expected receipt is now \$67,600.

The last portion of the monthly budget summary reports school generated revenue fees that are anticipated revenue to the Town of Newtown, Fees include:

- High school fees for three identified programs with the highest amount of fees anticipated from the high school sports participation fees.
- Building related fees for the use of the high school pool facility, and
- Miscellaneous fees.

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OBJECT CODE	EXPENSE CATEGORY	EXPENDED 2013 - 2014	YTD				YTD EXPENDED	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE
			APPROVED BUDGET	TRANSFERS 2014 - 2015	CURRENT TRANSFERS	CURRENT BUDGET					
GENERAL FUND BUDGET											
100	SALARIES	\$ 45,029,126	\$ 44,999,627	\$ -	\$ -	\$ 44,999,627	\$ 14,923,234	\$ 28,785,283	\$ 1,291,110	\$ 1,270,010	\$ 21,100
200	EMPLOYEE BENEFITS	\$ 10,633,809	\$ 11,169,344	\$ -	\$ (18,000)	\$ 11,151,344	\$ 5,527,850	\$ 4,578,433	\$ 1,045,061	\$ 1,033,376	\$ 11,685
300	PROFESSIONAL SERVICES	\$ 863,909	\$ 749,083	\$ -	\$ -	\$ 749,083	\$ 362,271	\$ 236,751	\$ 150,061	\$ 150,011	\$ 50
400	PURCHASED PROPERTY SERV.	\$ 2,418,651	\$ 2,139,419	\$ -	\$ -	\$ 2,139,419	\$ 1,007,613	\$ 403,303	\$ 728,504	\$ 727,750	\$ 754
500	OTHER PURCHASED SERVICES	\$ 6,809,463	\$ 7,197,647	\$ -	\$ 5,600	\$ 7,203,247	\$ 3,006,663	\$ 4,321,146	\$ (124,562)	\$ (151,536)	\$ 26,974
600	SUPPLIES	\$ 4,619,171	\$ 4,480,093	\$ -	\$ 12,400	\$ 4,492,493	\$ 1,602,638	\$ 173,597	\$ 2,716,258	\$ 2,775,918	\$ (59,660)
700	PROPERTY	\$ 552,547	\$ 534,735	\$ -	\$ -	\$ 534,735	\$ 373,365	\$ 27,151	\$ 134,218	\$ 134,218	\$ 0
800	MISCELLANEOUS	\$ 71,445	\$ 75,356	\$ -	\$ -	\$ 75,356	\$ 51,903	\$ 335	\$ 23,118	\$ 22,700	\$ 418
TOTAL GENERAL FUND BUDGET		\$ 70,998,119	\$ 71,345,304	\$ -	\$ -	\$ 71,345,304	\$ 26,855,537	\$ 38,525,998	\$ 5,963,769	\$ 5,962,447	\$ 1,322
900	TRANSFER NON-LAPSING	\$ 47,185									
GRAND TOTAL		\$ 71,045,304	\$ 71,345,304	\$ -	\$ -	\$ 71,345,304	\$ 26,855,537	\$ 38,525,998	\$ 5,963,769	\$ 5,962,447	\$ 1,322

(Unaudited)

Excess Cost Grant Reimbursement - Budgeted @ 75% \$ (1,278,035) \$ (1,278,035) \$ (1,292,388) \$ 14,353

This revenue will now be detailed on the "Offsetting Revenue" schedule following page 6 for this month only. Thereafter this line will not appear here on subsequent reports.

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OBJECT CODE	EXPENSE CATEGORY	EXPENDED 2013 - 2014	YTD				YTD EXPENDED	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE
			APPROVED BUDGET	TRANSFERS 2014 - 2015	CURRENT TRANSFERS	CURRENT BUDGET					
100	SALARIES										
	Administrative Salaries	\$ 3,013,832	\$ 2,969,510	\$ 11,950		\$ 2,981,460	\$ 1,229,908	\$ 1,748,410	\$ 3,142	\$ 3,147	\$ (5)
	Teachers & Specialists Salaries	\$ 30,557,381	\$ 30,434,118	\$ (88,828)		\$ 30,345,290	\$ 9,371,447	\$ 20,900,529	\$ 73,314	\$ 68,494	\$ 4,820
	Early Retirement	\$ 16,000	\$ 32,000	\$ -		\$ 32,000	\$ 32,000	\$ -	\$ -	\$ -	\$ -
	Continuing Ed./Summer School	\$ 85,584	\$ 89,175	\$ 763		\$ 89,938	\$ 64,225	\$ 25,603	\$ 110	\$ -	\$ 110
	Homebound & Tutors Salaries	\$ 388,172	\$ 243,875	\$ 1,405		\$ 245,280	\$ 106,127	\$ 84,326	\$ 54,827	\$ 57,500	\$ (2,673)
	Certified Substitutes	\$ 599,679	\$ 641,325	\$ -		\$ 641,325	\$ 160,217	\$ 83,200	\$ 397,909	\$ 397,900	\$ 9
	Coaching/Activities	\$ 524,130	\$ 529,749	\$ -		\$ 529,749	\$ 146,049	\$ 2,387	\$ 381,313	\$ 381,000	\$ 313
	Staff & Program Development	\$ 172,357	\$ 199,768	\$ -		\$ 199,768	\$ 75,359	\$ 81,740	\$ 42,668	\$ 42,600	\$ 68
	CERTIFIED SALARIES	\$ 35,357,135	\$ 35,139,520	\$ (74,710)	\$ -	\$ 35,064,810	\$ 11,185,333	\$ 22,926,195	\$ 953,282	\$ 950,641	\$ 2,641
	Supervisors/Technology Salaries	\$ 628,445	\$ 634,244	\$ 10,632		\$ 644,876	\$ 262,355	\$ 377,776	\$ 4,745	\$ 5,000	\$ (255)
	Clerical & Secretarial salaries	\$ 1,961,645	\$ 2,001,381	\$ 9,090		\$ 2,010,471	\$ 775,895	\$ 1,232,997	\$ 1,579	\$ 700	\$ 879
	Educational Assistants	\$ 2,007,432	\$ 1,957,487	\$ 74,710	\$ 62,000	\$ 2,094,197	\$ 715,520	\$ 1,386,348	\$ (7,672)	\$ (8,138)	\$ 466
	Nurses & Medical advisors	\$ 647,415	\$ 658,255	\$ -		\$ 658,255	\$ 244,411	\$ 414,128	\$ (284)	\$ (2,351)	\$ 2,067
	Custodial & Maint Salaries	\$ 2,807,655	\$ 2,857,565	\$ 647	\$ (4,400)	\$ 2,853,812	\$ 1,131,189	\$ 1,681,041	\$ 41,582	\$ 39,000	\$ 2,582
	Non Certified Salary Adjustment	\$ -	\$ 66,716	\$ (30,670)		\$ 36,046	\$ -	\$ -	\$ 36,046	\$ 36,046	\$ -
	Career/Job salaries	\$ 112,160	\$ 222,898	\$ 2,258	\$ (24,600)	\$ 200,556	\$ 81,174	\$ 81,060	\$ 38,323	\$ 37,800	\$ 523
	Special Education Svcs Salaries	\$ 727,151	\$ 928,549	\$ 7,850	\$ (33,000)	\$ 903,399	\$ 320,054	\$ 560,436	\$ 22,909	\$ 13,912	\$ 8,997
	Attendance & Security Salaries	\$ 381,784	\$ 209,824	\$ 193		\$ 210,017	\$ 73,453	\$ 122,449	\$ 14,115	\$ 12,500	\$ 1,615
	Extra Work - Non-Cert	\$ 76,137	\$ 69,825	\$ -		\$ 69,825	\$ 47,772	\$ 2,853	\$ 19,200	\$ 17,900	\$ 1,300
	Custodial & Maint. Overtime	\$ 280,772	\$ 210,363	\$ -		\$ 210,363	\$ 78,826	\$ -	\$ 131,537	\$ 131,500	\$ 37
	Civic activities/Park & Rec	\$ 41,394	\$ 43,000	\$ -		\$ 43,000	\$ 7,253	\$ -	\$ 35,747	\$ 35,500	\$ 247
	NON-CERTIFIED SALARIES	\$ 9,671,991	\$ 9,860,107	\$ 74,710	\$ -	\$ 9,934,817	\$ 3,737,902	\$ 5,859,088	\$ 337,828	\$ 319,369	\$ 18,459
	SUBTOTAL SALARIES	\$ 45,029,126	\$ 44,999,627	\$ -	\$ -	\$ 44,999,627	\$ 14,923,234	\$ 28,785,283	\$ 1,291,110	\$ 1,270,010	\$ 21,100

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OBJECT CODE	EXPENSE CATEGORY	EXPENDED 2013 - 2014	YTD				YTD EXPENDED	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE
			APPROVED BUDGET	TRANSFERS 2014 - 2015	CURRENT TRANSFERS	CURRENT BUDGET					
200	EMPLOYEE BENEFITS										
	Medical & Dental Expenses	\$ 8,206,890	\$ 8,736,119	\$ -	\$ (18,000)	\$ 8,718,119	\$ 4,334,073	\$ 4,335,789	\$ 48,257	\$ 46,085	\$ 2,172
	Life Insurance	\$ 87,200	\$ 87,337	\$ -		\$ 87,337	\$ 34,912	\$ -	\$ 52,425	\$ 54,585	\$ (2,160)
	FICA & Medicare	\$ 1,357,437	\$ 1,335,674	\$ -		\$ 1,335,674	\$ 469,518	\$ -	\$ 866,156	\$ 866,156	\$ 0
	Pensions	\$ 458,311	\$ 441,667	\$ -		\$ 441,667	\$ 426,647	\$ 13,680	\$ 1,340	\$ 1,200	\$ 140
	Unemployment & Employee Assist.	\$ 61,034	\$ 83,560	\$ -		\$ 83,560	\$ 11,980	\$ -	\$ 71,580	\$ 65,350	\$ 6,230
	Workers Compensation	\$ 462,937	\$ 484,987	\$ -		\$ 484,987	\$ 250,720	\$ 228,964	\$ 5,303	\$ -	\$ 5,303
	SUBTOTAL EMPLOYEE BENEFITS	\$ 10,633,809	\$ 11,169,344	\$ -	\$ (18,000)	\$ 11,151,344	\$ 5,527,850	\$ 4,578,433	\$ 1,045,061	\$ 1,033,376	\$ 11,685
300	PROFESSIONAL SERVICES										
	Professional Services	\$ 660,280	\$ 540,851	\$ -		\$ 540,851	\$ 308,063	\$ 193,346	\$ 39,442	\$ 40,011	\$ (569)
	Professional Educational Ser.	\$ 203,629	\$ 208,232	\$ -		\$ 208,232	\$ 54,208	\$ 43,405	\$ 110,619	\$ 110,000	\$ 619
	SUBTOTAL PROFESSIONAL SVCS	\$ 863,909	\$ 749,083	\$ -	\$ -	\$ 749,083	\$ 362,271	\$ 236,751	\$ 150,061	\$ 150,011	\$ 50
400	PURCHASED PROPERTY SVCS										
	Buildings & Grounds Services	\$ 653,698	\$ 651,600	\$ -		\$ 651,600	\$ 361,730	\$ 215,590	\$ 74,280	\$ 74,000	\$ 280
	Utility Services - Water & Sewer	\$ 113,321	\$ 117,000	\$ -		\$ 117,000	\$ 32,209	\$ -	\$ 84,791	\$ 84,500	\$ 291
	Building, Site & Emergency Repairs	\$ 503,610	\$ 460,850	\$ -		\$ 460,850	\$ 222,808	\$ 17,289	\$ 220,753	\$ 220,700	\$ 53
	Equipment Repairs	\$ 275,163	\$ 270,433	\$ -		\$ 270,433	\$ 107,893	\$ 51,099	\$ 111,441	\$ 111,400	\$ 41
	Rentals - Building & Equipment	\$ 300,843	\$ 305,536	\$ -		\$ 305,536	\$ 129,322	\$ 119,325	\$ 56,890	\$ 56,800	\$ 90
	Building & Site Improvements	\$ 572,017	\$ 334,000	\$ -		\$ 334,000	\$ 153,650	\$ -	\$ 180,350	\$ 180,350	\$ (0)
	SUBTOTAL PUR. PROPERTY SER.	\$ 2,418,651	\$ 2,139,419	\$ -	\$ -	\$ 2,139,419	\$ 1,007,613	\$ 403,303	\$ 728,504	\$ 727,750	\$ 754

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OBJECT CODE	EXPENSE CATEGORY	EXPENDED 2013 - 2014	YTD				YTD EXPENDED	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE
			APPROVED BUDGET	TRANSFERS 2014 - 2015	CURRENT TRANSFERS	CURRENT BUDGET					
500	OTHER PURCHASED SERVICES										
	Contracted Services	\$ 363,526	\$ 427,574	\$ -		\$ 427,574	\$ 225,355	\$ 89,318	\$ 112,901	\$ 112,900	\$ 1
	Transportation Services	\$ 3,714,217	\$ 3,891,158	\$ -		\$ 3,891,158	\$ 1,270,193	\$ 2,158,039	\$ 462,926	\$ 460,609	\$ 2,317
	Insurance - Property & Liability	\$ 297,870	\$ 319,261	\$ -	\$ 5,600	\$ 324,861	\$ 185,739	\$ 139,070	\$ 52	\$ -	\$ 52
	Communications	\$ 120,492	\$ 118,143	\$ -		\$ 118,143	\$ 55,606	\$ 49,395	\$ 13,142	\$ 13,100	\$ 42
	Printing Services	\$ 32,365	\$ 39,782	\$ -		\$ 39,782	\$ 13,801	\$ -	\$ 25,981	\$ 25,900	\$ 81
	Tuition - Out of District	\$ 2,074,030	\$ 2,177,958	\$ -		\$ 2,177,958	\$ 1,183,998	\$ 1,804,675	\$ (810,715)	\$ (835,045)	\$ 24,330
	Student Travel & Staff Mileage	\$ 206,963	\$ 223,771	\$ -		\$ 223,771	\$ 71,971	\$ 80,649	\$ 71,151	\$ 71,000	\$ 151
	SUBTOTAL OTHER PURCHASED SE	\$ 6,809,463	\$ 7,197,647	\$ -	\$ 5,600	\$ 7,203,247	\$ 3,006,663	\$ 4,321,146	\$ (124,562)	\$ (151,536)	\$ 26,974
600	SUPPLIES										
	Instructional & Library Supplies	\$ 906,748	\$ 911,614	\$ -		\$ 911,614	\$ 519,506	\$ 64,858	\$ 327,250	\$ 327,000	\$ 250
	Software, Medical & Office Sup.	\$ 175,444	\$ 210,966	\$ -		\$ 210,966	\$ 73,460	\$ 67,377	\$ 70,128	\$ 70,000	\$ 128
	Plant Supplies	\$ 351,501	\$ 375,100	\$ -		\$ 375,100	\$ 229,629	\$ 32,309	\$ 113,162	\$ 113,000	\$ 162
	Electric	\$ 1,406,552	\$ 1,406,127	\$ -	\$ 12,400	\$ 1,418,527	\$ 500,756	\$ -	\$ 917,772	\$ 980,780	\$ (63,008)
	Propane & Natural Gas	\$ 319,537	\$ 338,737	\$ -		\$ 338,737	\$ 51,321	\$ -	\$ 287,416	\$ 286,800	\$ 616
	Fuel Oil	\$ 662,339	\$ 528,038	\$ -		\$ 528,038	\$ 26,684	\$ -	\$ 501,354	\$ 501,354	\$ (0)
	Fuel For Vehicles & Equip.	\$ 531,906	\$ 452,503	\$ -		\$ 452,503	\$ 61,165	\$ -	\$ 391,338	\$ 389,184	\$ 2,154
	Textbooks	\$ 265,144	\$ 257,008	\$ -		\$ 257,008	\$ 140,117	\$ 9,053	\$ 107,838	\$ 107,800	\$ 38
	SUBTOTAL SUPPLIES	\$ 4,619,171	\$ 4,480,093	\$ -	\$ 12,400	\$ 4,492,493	\$ 1,602,638	\$ 173,597	\$ 2,716,258	\$ 2,775,918	\$ (59,660)

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OBJECT CODE	EXPENSE CATEGORY	EXPENDED 2013 - 2014	YTD				YTD EXPENDED	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE
			APPROVED BUDGET	TRANSFERS 2014 - 2015	CURRENT TRANSFERS	CURRENT BUDGET					
700	PROPERTY										
	Capital Improvements (Sewers)	\$ 124,177	\$ 124,177	\$ -	\$ -	\$ 124,177	\$ 124,177	\$ -	\$ 0	\$ -	
	Technology Equipment	\$ 329,592	\$ 378,900	\$ -	\$ -	\$ 378,900	\$ 228,405	\$ 25,091	\$ 125,405	\$ (0)	
	Other Equipment	\$ 98,778	\$ 31,658	\$ -	\$ -	\$ 31,658	\$ 20,784	\$ 2,061	\$ 8,813	\$ 0	
	SUBTOTAL PROPERTY	\$ 552,547	\$ 534,735	\$ -	\$ -	\$ 534,735	\$ 373,365	\$ 27,151	\$ 134,218	\$ 134,218	
800	MISCELLANEOUS										
	Memberships	\$ 71,445	\$ 75,356	\$ -	\$ -	\$ 75,356	\$ 51,903	\$ 335	\$ 23,118	\$ 22,700	
	SUBTOTAL MISCELLANEOUS	\$ 71,445	\$ 75,356	\$ -	\$ -	\$ 75,356	\$ 51,903	\$ 335	\$ 23,118	\$ 22,700	
	TOTAL LOCAL BUDGET	\$ 70,998,119	\$ 71,345,304	\$ -	\$ -	\$ 71,345,304	\$ 26,855,537	\$ 38,525,998	\$ 5,963,769	\$ 5,962,447	
										\$ 1,322	

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OBJECT CODE	EXPENSE CATEGORY	EXPENDED 2013 - 2014	YTD				YTD EXPENDED	ENCUMBER	BALANCE	ANTICIPATED OBLIGATIONS	PROJECTED BALANCE
			APPROVED BUDGET	TRANSFERS 2014 - 2015	CURRENT TRANSFERS	CURRENT BUDGET					

<u>SCHOOL GENERATED FEES</u>	2014-15			% RECEIVED
	<u>APPROVED BUDGET</u>	<u>RECEIVED</u>	<u>BALANCE</u>	
<u>HIGH SCHOOL FEES</u>				
NURTURY PROGRAM	\$8,000	\$8,000.00	\$0.00	100.00%
PARKING PERMITS	\$20,000	\$20,000.00	\$0.00	100.00%
PAY FOR PARTICIPATION IN SPORTS	\$84,800	\$38,711.00	\$46,089.00	45.65%
	\$112,800	\$66,711.00	\$46,089.00	59.14%
<u>BUILDING RELATED FEES</u>				
ENERGY - ELECTRICITY	\$313	\$0.00	\$313.00	0.00%
HIGH SCHOOL POOL - OUTSIDE USAGE	\$500	\$0.00	\$500.00	0.00%
	\$813	\$0.00	\$813.00	0.00%
MISCELLANEOUS FEES	\$150	\$345.00	(\$195.00)	230.00%
TOTAL SCHOOL GENERATED FEES	\$113,763	\$67,056.00	\$46,707.00	58.94%

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OFFSETTING REVENUE INCLUDED IN ANTICIPATED OBLIGATIONS

OBJECT	EXPENSE CATEGORY	BUDGETED	BUDGETED	RECEIVED	EXPECTED	BALANCE
100	SALARIES	\$ (105,874)	\$ (105,874)	\$ -	\$ (72,163)	\$ (33,711)
200	EMPLOYEE BENEFITS	\$ -	\$ -	\$ -	\$ -	\$ -
300	PROFESSIONAL SERVICES	\$ (69,991)	\$ (69,991)	\$ -	\$ (64,789)	\$ (5,202)
400	PURCHASED PROPERTY SERV.	\$ -	\$ -	\$ -	\$ -	\$ -
500	OTHER PURCHASED SERVICES	\$ (1,102,170)	\$ (1,102,170)	\$ -	\$ (1,155,436)	\$ 53,266
600	SUPPLIES	\$ -	\$ -	\$ -	\$ -	\$ -
700	PROPERTY	\$ -	\$ -	\$ -	\$ -	\$ -
800	MISCELLANEOUS	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL GENERAL FUND BUDGET		\$ (1,278,035)	\$ -	\$ -	\$ (1,292,388)	\$ 14,353
100	SALARIES					
	Administrative Salaries	\$ -	\$ -		\$ -	\$ -
	Teachers & Specialists Salaries	\$ (23,564)	\$ (23,564)		\$ (22,506)	\$ (1,058)
	Early Retirement	\$ -	\$ -		\$ -	\$ -
	Continuing Ed./Summer School	\$ -	\$ -		\$ -	\$ -
	Homebound & Tutors Salaries	\$ -	\$ -		\$ -	\$ -
	Certified Substitutes	\$ -	\$ -		\$ -	\$ -
	Coaching/Activities	\$ -	\$ -		\$ -	\$ -
	Staff & Program Development	\$ -	\$ -		\$ -	\$ -
	CERTIFIED SALARIES	\$ (23,564)	\$ (23,564)	\$ -	\$ (22,506)	\$ (1,058)
	Supervisors/Technology Salaries	\$ -	\$ -		\$ -	\$ -
	Clerical & Secretarial salaries	\$ -	\$ -		\$ -	\$ -
	Educational Assistants	\$ (11,353)	\$ (11,353)		\$ (8,138)	\$ (3,215)
	Nurses & Medical advisors	\$ (20,301)	\$ (20,301)		\$ (14,351)	\$ (5,950)
	Custodial & Maint Salaries	\$ -	\$ -		\$ -	\$ -
	Non Certified Salary Adjustment	\$ -	\$ -		\$ -	\$ -
	Career/Job salaries	\$ -	\$ -		\$ -	\$ -
	Special Education Svcs Salaries	\$ (50,656)	\$ (50,656)		\$ (27,168)	\$ (23,488)
	Attendance & Security Salaries	\$ -	\$ -		\$ -	\$ -
	Extra Work - Non-Cert	\$ -	\$ -		\$ -	\$ -
	Custodial & Maint. Overtime	\$ -	\$ -		\$ -	\$ -
	Civic activities/Park & Rec	\$ -	\$ -		\$ -	\$ -
	NON-CERTIFIED SALARIES	\$ (82,310)	\$ (82,310)	\$ -	\$ (49,657)	\$ (32,653)
	SUBTOTAL SALARIES	\$ (105,874)	\$ (105,874)	\$ -	\$ (72,163)	\$ (33,711)

NEWTOWN BOARD OF EDUCATION

BUDGET SUMMARY REPORT

FOR THE MONTH ENDING - NOVEMBER 30, 2014

OFFSETTING REVENUE INCLUDED IN ANTICIPATED OBLIGATIONS

OBJECT	EXPENSE CATEGORY	BUDGETED	BUDGETED	RECEIVED	EXPECTED	BALANCE
200	EMPLOYEE BENEFITS					
	SUBTOTAL EMPLOYEE BENEFITS	\$ -	\$ -	\$ -	\$ -	\$ -
300	PROFESSIONAL SERVICES					
	Professional Services	\$ (69,991)		\$ (69,991)	\$ (64,789)	\$ (5,202)
	Professional Educational Ser.	\$ -		\$ -	\$ -	\$ -
	SUBTOTAL PROFESSIONAL SVCS	\$ (69,991)	\$ -	\$ (69,991)	\$ (64,789)	\$ (5,202)
400	PURCHASED PROPERTY SVCS					
	SUBTOTAL PUR. PROPERTY SER.	\$ -	\$ -	\$ -	\$ -	\$ -
500	OTHER PURCHASED SERVICES					
	Contracted Services	\$ (1,596)		\$ (1,596)	\$ -	\$ (1,596)
	Transportation Services	\$ (277,990)		\$ (277,990)	\$ (265,391)	\$ (12,599)
	Insurance - Property & Liability	\$ -		\$ -	\$ -	\$ -
	Communications	\$ -		\$ -	\$ -	\$ -
	Printing Services	\$ -		\$ -	\$ -	\$ -
	Tuition - Out of District	\$ (822,584)		\$ (822,584)	\$ (890,045)	\$ 67,461
	Student Travel & Staff Mileage	\$ -		\$ -	\$ -	\$ -
	SUBTOTAL OTHER PURCHASED SER.	\$ (1,102,170)	\$ -	\$ (1,102,170)	\$ (1,155,436)	\$ 53,266
600	SUPPLIES					
	SUBTOTAL SUPPLIES	\$ -	\$ -	\$ -	\$ -	\$ -
700	PROPERTY					
	SUBTOTAL PROPERTY	\$ -	\$ -	\$ -	\$ -	\$ -
800	MISCELLANEOUS					
	Memberships			\$ -		\$ -
	SUBTOTAL MISCELLANEOUS	\$ -	\$ -	\$ -	\$ -	\$ -
	TOTAL LOCAL BUDGET	\$ (1,278,035)	\$ -	\$ (1,278,035)	\$ (1,292,388)	\$ 14,353

Excess Cost and Agency placement Grants were budgeted at 75%. The estimated grant is calculated at the same percentage.

2014 - 2015
NEWTOWN BOARD OF EDUCATION
TRANSFERS RECOMMENDED
DECEMBER 16, 2014

12/11/2014

AMOUNT	FROM		TO		REASON
	CODE	DESCRIPTION	CODE	DESCRIPTION	
ADMINISTRATIVE					
\$87,000	100	TEACHERS & SPECIALISTS SALARIES	100	TEACHERS & SPECIALISTS SALARIES	TRANSFERS BETWEEN TEACHERS SALARIES ACCOUNTS TO COVER COST OF SALARIES FOR CURRENT STAFF
\$4,400	100	CUSTODIAL & MAINT. SALARIES	100	EDUCATIONAL ASSISTANTS	TO COVER THE COST OF CURRENT EDUCATIONAL ASSISTANTS SALARIES DUE TO CURRENT NEEDS
\$24,600	100	CAREER/JOB SALARIES			
\$33,000	100	SPECIAL EDUCATION SERVICES SALARIES			
\$5,600	200	MEDICAL & DENTAL EXPENSES	500	INSURANCE - PROPERTY & LIABILITY	TO COVER INCREASED INSURANCE PREMIUMS
\$12,400	200	MEDICAL & DENTAL EXPENSES	600	ELECTRIC	PARTIAL COVERAGE OF INCREASED ELECTRICITY COST FOR THE YEAR

AUGUST 3(6)

M	T	W	TH	F
24	25	26	27	28
31				

24-All Teachers Report
24, 25 & 26 -Staff Development Days
27-Students Report

SEPTEMBER 19(19)

M	T	W	TH	F
	1	2	3	4
--	8	9	10	11
--	15	16	17	18
21	22	--	24	25
28	29	30		

7-Labor Day, Schools Closed
14-Rosh Hashanah, Schools Closed
23-Yom Kippur-Schools Closed

OCTOBER 22(22)

M	T	W	TH	F
			1	2
5	6	7	8	*9
12	13	14	15	16
19	20	21	22	23
26	27	28	29	30

***9-Early Dismissal-Staff Dev.**

NOVEMBER 18(19)

M	T	W	TH	F
2	--	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	*25	--	--
30				

3-Election Day-Schools Closed For Students, Staff Development Day
25-Early Dismissal for Thanksgiving
26-27-Thanksgiving Recess

DECEMBER 17(17)

M	T	W	TH	F
	1	*2	3	4
7	8	9	10	11
14	15	16	17	18
21	22	23	--	--
--	--	--	--	--

***2-Early Dismissal-Staff Dev.**
24-31-Holiday Recess

JANUARY 19(19)

M	T	W	TH	F
				--
4	5	6	7	8
11	12	13	14	*15
--	19	20	21	22
25	26	27	28	29

1-New Year's Day 2
***15-Early Dismissal-Staff Dev.**
18-Martin Luther King Day, Schools Closed

FEBRUARY 19(19)

M	T	W	TH	F
1	2	3	4	*5
8	9	10	11	12
15	16	17	18	19
--	--	24	25	26
29				

***5-Early Dismissal-Staff Dev.**
22-23-Schools Closed

MARCH 22(22)

M	T	W	TH	F
	1	2	3	*4
7	8	9	10	11
14	15	16	17	18
21	22	23	24	--
28	29	30	31	

***4-Early Dismissal-Staff Dev.**
25 -Good Friday- Schools Closed

APRIL 16(16)

M	T	W	TH	F
				1
4	5	*6	7	8
--	--	--	--	--
18	19	20	21	22
25	26	27	28	29

***6- 2-hr. delay - Staff Dev.**
11-15 Schools Closed

MAY 21(21)

M	T	W	TH	F
2	3	*4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
--	31			

***4- 2-hr.delay - Staff Dev.**
30-Memorial Day, Schools Closed

JUNE 7(7)

M	T	W	TH	F
		1	2	3
6	7	8	☀9	10
13	14	15	■16	17
20	21	22	23	24
27	28	29	30	

☀-Projected last day of school without emergency closing days
■-Projected last day of school if the 5 built-in days are used

Student Days - 183
Teacher Days - 187

The calendar builds-in five emergency closings, with the last day of school projected as June 16th. Unused closings will be deducted from this date. Extra closings will be added on June 17 and 20 with additional days taken from the April break starting with 4/15, 4/14, etc.

Open House Dates:

Elementary -
 Reed Intermediate -
 Middle School -
 High School -

Conferences/Early Dismissals:

Elementary -
 Reed Intermediate -
 Middle School -
 High School -

Adopted

AUGUST 3(6)

M	T	W	TH	F
		24	25	26
29	30	31		

24-All Teachers Report
24, 25 & 26 -Staff Development Days
29 Students Report

SEPTEMBER 21(21)

M	T	W	TH	F
			1	2
--	6	7	8	9
12	13	14	15	16
19	20	21	22	23
26	27	28	29	30

5-Labor Day, Schools Closed

OCTOBER 19(19)

M	T	W	TH	F
--	4	5	6	*7
10	11	--	13	14
17	18	19	20	21
24	25	26	27	28
31				

***7-Early Dismissal-Staff Dev.**
3 - Rosh Hashanah-Schools Closed
12-Yom Kippur-Schools Closed

NOVEMBER 19(20)

M	T	W	TH	F
	1	2	3	4
7	--	9	10	11
14	15	16	17	18
21	22	*23	--	--
28	29	30		

8-Election Day-Schools Closed For Students, Staff Development Day
23-Early Dismissal for Thanksgiving
24-25-Thanksgiving Recess

DECEMBER 17(17)

M	T	W	TH	F
			1	2
5	6	7	8	*9
12	13	14	15	16
19	20	21	22	23
--	--	--	--	--

***9-Early Dismissal-Staff Dev.**
26-30-Holiday Recess

JANUARY 20(20)

M	T	W	TH	F
--	3	4	5	6
9	10	11	12	*13
--	17	18	19	20
23	24	25	26	27
30	31			

***13-Early Dismissal-Staff Dev.**
2-New Year's Day
16-Martin Luther King Day, Schools Closed

FEBRUARY 18(18)

M	T	W	TH	F
		1	2	*3
6	7	8	9	10
13	14	15	16	17
--	--	22	23	24
27	28			

***3-Early Dismissal-Staff Dev.**
20-21-Schools Closed

MARCH 23(23)

M	T	W	TH	F
		1	2	*3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	31

***3-Early Dismissal-Staff Dev.**

Student Days - 183
Teacher Days - 187

APRIL 14(14)

M	T	W	TH	F
3	4	*5	6	7
10	11	12	13	--
--	--	--	--	--
24	25	26	27	28

***5- 2-hr.delay-Staff Dev.**
14-Good Friday- Schools Closed
17-21 Schools Closed

MAY 22(22)

M	T	W	TH	F
1	2	*3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
--	30	31		

***3- 2-hr.delay-Staff Dev.**
29-Memorial Day- Schools Closed

JUNE 7(7)

M	T	W	TH	F
			1	2
5	6	7	8	☀9
12	13	14	15	■16
19	20	21	22	23
26	27	28	29	30

☀-Projected last day of school without emergency closing days
■-Projected last day of school if the 5 built-in days are used

The calendar builds-in five emergency closings, with the last day of school projected as June 16th. Unused closings will be deducted from this date. Extra closings will be added on June 19 and 20 with additional days taken from the April break starting with 4/21, 4/20, etc.

Open House Dates:

Elementary -
 Reed Intermediate -
 Middle School -
 High School -

Conferences/Early Dismissals:

Elementary -
 Reed Intermediate -
 Middle School -
 High School -

Adopted

Board of Education Standing Committees

The following are standing committees of the BOE, expected to make regular reports to the BOE as a whole. Meetings will be posted and will be open to the public. Each committee will elect a chairperson and may elect a secretary. The chairperson will serve as secretary if none is elected. The committee chairperson will be responsible for calling meetings, setting agendas, and moving committee work forward. The committee secretary will write up brief minutes and post in a timely manner consistent with FOI requirements. The Board Chair, with the approval of the Board, may also appoint additional standing committees as may be needed.

CIP/FACILITIES/FINANCE COMMITTEE

1. Financial Responsibilities

- a) Review monthly line item expenditure report from the BOE Business Director;
- b) Review all budget transfers between line items and, when required, make recommendations for such transfers;
- c) Review financial reporting mechanisms and yearly budget documentation for clarity and content and present any recommendations;

2. CIP/Facilities Responsibilities

- a) Review capital expenditures and proposals for the Town's five year capital improvement plan (CIP) in accordance with the CIP regulation timeline;
- b) Review quarterly, building and maintenance needs with the Building and Grounds Facility Director;

COMMUNICATIONS COMMITTEE

1. Work with the Superintendent and the Board to communicate effectively with the education community and the community as a whole about school matters
2. Produce fact-based newsletters and documents as directed by the Board

CONTRACT NEGOTIATION COMMITTEE

1. Develop a consistent body of expertise regarding union contract negotiations at the Board level.
2. Committee members will split specific union negotiations among themselves, and members should reflect a variety of skills and length on the Board.

CURRICULUM AND INSTRUCTION COMMITTEE

1. Ensure that the direction of the curriculum reflects the Board of Education mission, beliefs and objectives at both the course-specific and K-12 vertical alignment level.
2. Meet with administration and staff to review goals, curriculum updates, new textbooks, proposed or changed courses and programs and make recommendations regarding these items.

POLICY COMMITTEE

1. Review and propose revisions to Board policies as needed to ensure consistency with the District mission statement, best practices and for compliance with state and federal laws;
2. Develop new Board policies as appropriate.

TECHNOLOGY COMMITTEE

1. Meet with district technology representatives to review technology needs and status of inventory.
2. Review availability of technology for standardized testing and educational needs.

Assignments:

CIP/Facilities/Finance Committee

Kathy Hamilton, Chair
David Freedman

Communication Committee:

Keith Alexander
Debbie Leidlein

Contract Negotiation Committee

Debbie Leidlein, Chair
Kathy Hamilton
Michelle Ku

Curriculum and Instruction Committee

Michelle Ku, Chair
John Vouros

Policy Committee

Kathy Hamilton, Chair
Laura Roche
David Freedman

Technology Committee

Debbie Leidlein, Chair
David Freedman

Other Assignments:

Liaison to District Special Education/Gifted Education Team: John Vouros, Michelle Ku

Liaison to District Security Team: Michelle Ku

Liaison to Legislative Council: Michelle Ku

Liaison to Board of Finance: Kathy Hamilton

Liaison to Education Connection: Michelle Ku

Liaison to Magnet School: John Vouros

Liaison to Municipal Building Strategic Plan Advisory Committee: Kathy Hamilton, Michelle Ku

Liaison to Culture and Climate Committee: Laura Roche, John Vouros

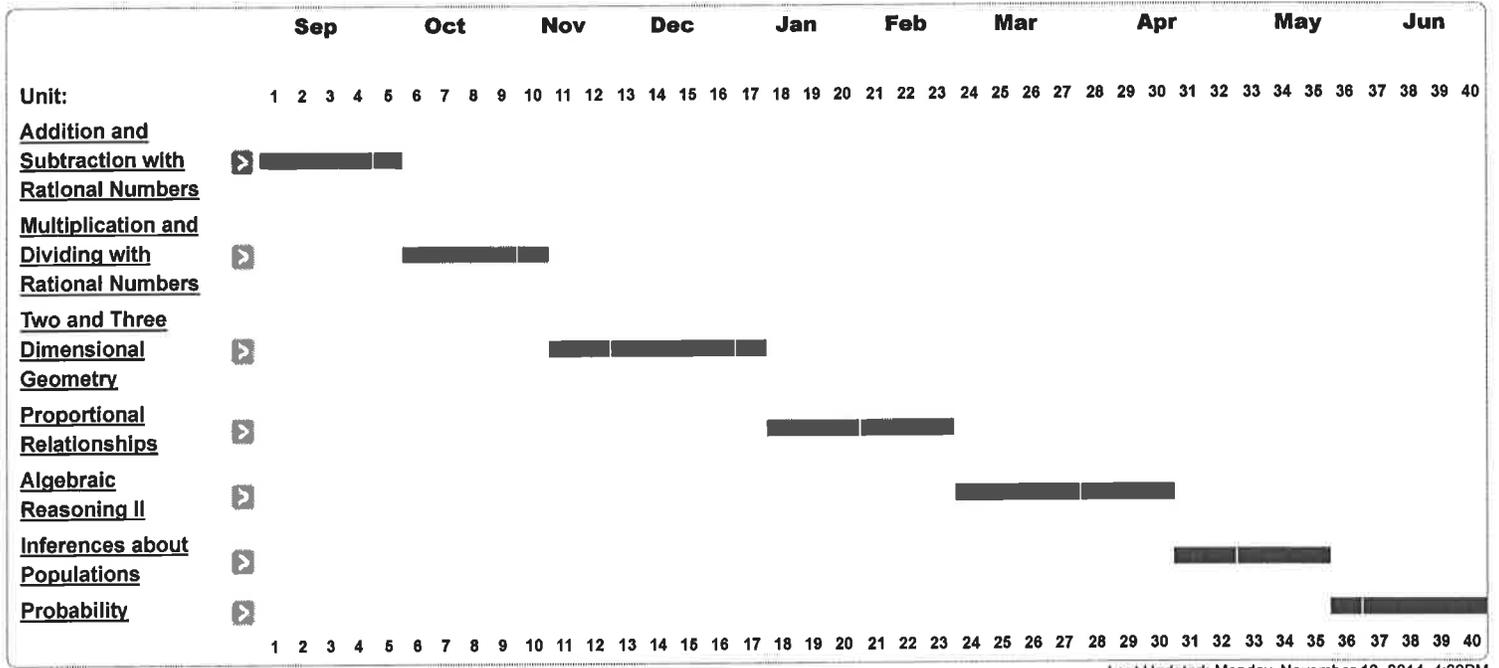


Newtown Public Schools
Course Assignments > Math Grade 7



Collaboration

Grade 7 | Mathematics | Newtown Middle School



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Addition and Subtraction with Rational Numbers

Collaboration Math Grade 7 Grade 7 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 3:15PM

Unit: Addition and Subtraction with Rational Numbers (Week 1, 5 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. There are many ways to represent a number.
2. Number sense develops through experience with real-world situations.
3. Subtraction is an additive inverse.

Essential Question(s)

1. How can mathematical ideas be represented?
2. What happens when you add and subtract integers?
3. What happens when you add and subtract fractions?
4. What are different ways that numbers can be represented and how do they relate to each other?
5. How do I determine the best numerical representation for a given situation?

Guiding Questions

Factual, Conceptual, Provocative

1. How do you add integers
2. How do you subtract integers?
3. How do you add fractions?
4. How do you subtract fractions?
5. How are numbers used in daily life?
6. How can we use the number line to represent operations in real-world situations?
7. What are different ways you can rewrite the same number sentence?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, The Number System

7.NS.A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

- 7.NS.A.1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
- 7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

Add and subtract rational numbers (3)
 Describe opposites quantities (1)
 Understand positive or negative direction (2)
 Show additive inverses (1)
 Interpret sums in context (2)
 Understand subtraction as additive inverses (2)
 Show absolute value (2)
 Apply absolute value principle in context (3)
 Apply properties of operations as strategies (3)
 Solve with or without context (3, 4)
 Apply properties of operations to calculate (3)
 Convert between equivalent forms (2)
 Assess reasonableness of answers (5)
 Use mental computation and estimation strategies

Content/Topics

Critical content that students must KNOW

- Categorize and Define all Rational Numbers
- Compare and order Rational Numbers
- Number Line, Opposites, and Absolute Value
- Using Estimation Strategies
- Properties of Addition
- Additive Inverse

Skills

Transferable skills that students must be able to DO

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

<ul style="list-style-type: none"> • Mixed Numbers and Improper Fractions • Write Fractions as Decimals • Write Decimals as Fractions • Adding and Subtracting Integers • Add and Subtract Like Fractions • Add and Subtract Unlike Fractions • Add and Subtract Mixed Numbers • Adding and Subtracting Positive and Negative Decimals <p>Vocabulary: Integer Negative Integer Positive Integer Graph Absolute Value Opposites Additive Inverse Common Denominator Least Common Denominator Like Fractions Rational Numbers Unlike Fraction</p>		
<p>Core Learning Activities</p> <p>Spreadsheet scramble Flipping for Integers Game VersaTiles Inquiry Lab: Add Integers-Football Field Inquiry Lab: Subtract Integers-Dolphin Swim Inquiry Lab: Distance on a Number Line Problem Solving Investigation: Look for a Pattern Inquiry Lab: Rational Numbers on the Number Line-Graph Inquiry Lab: Add and Subtract on the Number Line-Baseball Problem Solving Investigation: Draw a Diagram</p>	<p>Resources</p> <p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 1 - Graphic Organizer-Integer - Number Lines - Graphic Organizer-Opposites - Rate Yourself - Reflect On Essential Question - Quick check - Foldable</p>	
<p>Assessments (Titles)</p> <p>Unit 1 Student Self-Reflection Form re: essential and guiding question Summative: Self Assessment</p> <p>Exit Tickets Formative: Other written assessments</p> <p>Keeping Track of the Distance Pronlem Formative: Other written assessments</p> <p>Postcard Collection Problem Formative: Other written</p>	<p>Graduation Standards</p> <p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<p>Interdisciplinary Connections</p> <ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product

<p>assessments</p> <p>Summative Unit Test Summative: Written Test</p> <p>“Trail Mix” Problem Summative: Group Project Performance Task</p> <p>The Fraction Maze” Summative: Group Project</p>		<p>7. Evaluate both the process and the product</p>
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Multiplication and Dividing with Rational Numbers

Collaboration **Math Grade 7** Grade 7 | Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 3:15PM

Unit: Multiplication and Dividing with Rational Numbers (Week 6, 5 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. The relationships among numbers and number systems form the foundations of number sense and mathematics communication.

Essential Question(s)

1. How can mathematical ideas be represented?
2. What happens when you multiply and divide integers?
3. What happens when you multiply and divide fractions?
4. Why are different representations of the same number needed to solve different types of problems?
5. Why is there a specific order to the procedures used in operations?
6. How do the mathematical operations relate to one another?
7. How do I know which computational method to use?

Guiding Questions

Factual, Conceptual, Provocative

1. How do you multiply integers?
2. How do you divide integers?
3. How do you multiply fractions?
4. How do you divide fractions?
5. How do I apply the properties of multiplication to fractions?
6. How can we assess the reasonableness of answers using mental computation and estimation strategies?
7. Why do we need to apply rules in mathematics?
8. What are different ways you can rewrite the same number sentence?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, The Number System

7.NS.A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

- 7.NS.A.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- 7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

CCSS: Mathematics, CCSS: Grade 7, Expressions & Equations

7.EE.A. Use properties of operations to generate equivalent expressions.

- 7.EE.A.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.B. Solve real-life and mathematical problems using

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

Multiply and divide rational numbers (3)
 Understand/develop rules for multiplying signed numbers (2)
 Understand every quotient of integers with non-zero divisor is a rational number (2)
 Interpret products and quotients in context (6)
 Apply properties of operations as strategies (3)
 Solve multi-step problems in context (2)
 Apply properties of operations to calculate (4)
 Convert between equivalent forms of rational numbers (3)
 Understand the relationship between equivalent forms of expression (2)
 Assess reasonableness of answers (5)
 Use mental computation and estimation strategies

<p>numerical and algebraic expressions and equations.</p> <ul style="list-style-type: none"> 7.EE.B.3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. 		
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> Use Estimation Strategies Properties of Multiplication Multiplicative Inverse Distributive Property Multiply and Divide Integers with Different Signs Multiply and Divide Integers with the Same Sign Convert Fractions and Decimals Multiply and Divide Positive and Negative Decimals Multiply and Divide Positive and Negative Fractions Multiply and Divide Positive and Negative Mixed Numbers Convert between systems Orders of Operation and Exponents <p>Vocabulary: Multiplicative Property of Zero Distributive Property Multiplicative Identity Repeating Decimal Terminating Decimal Bar Notation</p>	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving. 	
<p>Core Learning Activities</p> <p>Integer Contig Decimal Contig Hot Number VersaTiles Inquiry Lab: Multiply Integers Inquiry Lab: Use Properties to Multiply-Scientific Properties</p>	<p>Resources</p> <p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 1 - Graphic Organizer-Multiply/Divide Integers - Number Lines - Graphic Organizer-Fraction Rules - Rate Yourself - Reflect On Essential Question - Quick check - Foldable</p>	
<p>Assessments (Titles)</p> <p>Unit 2 Student Self-Reflection Form</p>	<p>Graduation Standards</p> <p>Information Literacy</p>	<p>Interdisciplinary Connections</p>

<p>re: essential and guiding questions Summative: Self Assessment</p> <p>Unit 2 Exit Tickets Formative: Other written assessments</p> <p>Common Unit Test Summative: Written Test</p> <p>“The Decimal Maze” Performance Task Summative: Group Project</p> <p>“Kneading Bread” Performance Task Summative: Group Project</p>	<p><u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product
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Two and Three Dimensional Geometry

Collaboration Math Grade 7 Grade 7 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 3:16PM

Unit: Two and Three Dimensional Geometry (Week 11, 7 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Geometry and spatial sense offer ways to visualize, to interpret, and to reflect on our physical environment.
2. Objects can be described and compared using their geometric properties.

Essential Question(s)

1. How can you use different measurements to solve real-life problems?
2. How does geometry help us describe real-world objects?
3. How do measurements help you describe real-world objects?
4. How are geometric properties used to solve problems in everyday life?
5. How can plane and solid shapes be described?
6. How do we describe, sort, and classify figures and solids?

Guiding Questions

Factual, Conceptual, Provocative

1. How do polygons help us describe real-world objects?
2. How do polyhedrons help us describe real-world objects?
3. How do you use circumference to measure real-world objects?
4. How do you use area to measure real-world objects?
5. How do you use volume to measure real-world objects?
6. How do you use surface area to measure real-world objects?
7. How can I solve real-life and mathematical problems involving angle measure, area, surface area, and volume?
8. How can I draw, construct, and describe geometrical figures and describe the relationships between them?
9. How are geometric figures constructed?
10. How do three-dimensional objects relate to its two-dimensional counterpart?
11. What is the relationship between area and circumference of a circle?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Geometry

7.G.A. Draw construct, and describe geometrical figures and describe the relationships between them.

- 7.G.A.2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
- 7.G.A.3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Know and Develop formulas - 2,3
- Solve problems using formulas - 3
- Give and Derive informally the relationship between circumference and area of a circle - 4
- Solve with and without context
- Draw and Construct geometric shapes with given conditions - 3
- Use rulers, protractors, technology - 3
- Describe two-dimensional figures that result from plane sections of three-dimensional figures - 2
- Write and Solve problems using equations to find an

<p>rectangular pyramids.</p> <p>7.G.B. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</p> <ul style="list-style-type: none"> 7.G.B.4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. 7.G.B.5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. 7.G.B.6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. 	<p>unknown angle in a figure - 4,5</p>
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> Classify Angles Name and Identify Angles Find a Missing Measure Pairs of Angles – Complementary and Supplementary Classify Triangles Angles of a Triangle (180°) Use a Scale Drawing or a Scale Model Find a Scale Factor Draw Three-Dimensional Figures Identify Cross Sections Identify Three-Dimensional Figures Radius and Diameter of a Circle Find Circumference and Area of a Circle Approximate Circumference and Area of a Circle Area of Composite Figures Volume of Right Prisms Volume and Height of Pyramids Surface Area and Nets of Prisms Surface Area and Nets of Pyramids Volume and Surface Area of Composite Figures <p>Vocabulary: Acute Angle Acute Triangle Adjacent Angles Base Center Circle Circumference Complementary Angles Composite Figure Cone Congruent Congruent Segments</p>	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

<p>Coplanar Cross Section Cylinder Diagonal Diameter Edge Equilateral Triangle Face Isosceles Triangle Lateral Face Lateral Surface Area Obtuse Angle Obtuse Triangle Pi Plane Polyhedron Prism Pyramid Radius Regular Pyramid Right Angle Right Triangle Scale Scale Drawing Scale Factor Scale Model Scalene Triangle Semicircle Slant Height Straight Angle Supplementary Angles Surface Area Triangle Vertex Vertical Angles Volume</p>	
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Core Learning Activities	Resources
<p>"Fence for Fido" "Circle Activity" "Rectangle Problem" "Play Dough Cross Sections" VersaTiles Inquiry Lab: Create Triangles Inquiry Lab: Draw Triangles Problem Solving Investigation: Make a Model Inquiry Lab: Investigate Online Maps and Scale Drawings Inquiry Lab: Scale Drawings Inquiry Lab: Circumference Inquiry Lab: Area of Circles Problem Solving Investigation: Solve a Simpler Problem Inquiry Lab: Volume of Pyramids Inquiry Lab: Nets of Three-Dimensional Figures Inquiry Lab: Relate Surface Area and Volume Inquiry Lab: Composite Figures</p>	<p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Model Sheets - Formulas - Graphic Organizers - Rate Yourself - Reflect On Essential Question - Quick check - Foldable</p>

Assessments (Titles)	Graduation Standards	Interdisciplinary Connections
<p>Unit 3 Student Self-Reflection Form re: essential and guiding questions Summative: Other written</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u></p>	<p>1. Reason abstractly and quantitatively</p>

<p>assessments</p> <p>Exit Tickets for Unit 3 Formative: Other written assessments</p> <p>Design Your Own Park Performance Task Summative: Group Project</p> <p>Unit 3 test Summative: Written Test</p>	<p><u>Written Performance</u></p>	<ol style="list-style-type: none"> 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product
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Proportional Relationships

Collaboration Math Grade 7 Grade 7 Mathematics Newtown Middle School 2014-2016



Wednesday, November 12, 2014, 3:17PM

Unit: Proportional Relationships (Week 18, 6 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Mathematics can be used to describe change and model real world situations.

Essential Question(s)

1. How can you use mathematics to describe change, and model real world situations?
2. How can you show that two objects are proportional?
3. How can percent help you understand situations involving money?

Guiding Questions

Factual, Conceptual, Provocative

1. How can you solve a proportion?
2. How can you show that two objects are proportional with a table?
3. How can you show that two objects are proportional with a graph?
4. How can you show that two objects are proportional with an equation?
5. How is rate a measure of one quantity per unit of another quantity?
6. Give an example of a real-world situation in which you would find the percent of a number.
7. Explain how two amounts of change can be the same but the percents of change can be different.

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Ratios & Proportional Relationships

7.RP.A. Analyze proportional relationships and use them to solve real-world and mathematical problems.

- 7.RP.A.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
- 7.RP.A.2. Recognize and represent proportional relationships between quantities.
- 7.RP.A.2a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- 7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- 7.RP.A.2c. Represent proportional relationships by equations.
- 7.RP.A.2d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Recognize proportional relationships – 1,2
- Represent proportional relationships in a variety of ways - 3
- Decide proportional relationship - 5
- Test equivalent ratios - 5
- Observe graph - 1
- Identify constant of proportionality - 4
- Explain point (x,y) - 2
- Solve multi-step problems – 4,5
- Compute unit rates - 3
- Compute actual lengths/areas from scale drawings - 3
- Reproduce a scale drawing at a different scale – 2 (covered in unit 3)

- 7.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.

CCSS: Mathematics, CCSS: Grade 7, Geometry

7.G.A. Draw construct, and describe geometrical figures and describe the relationships between them.

- 7.G.A.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

Content/Topics

*Critical content that students must **KNOW***

- Use bar diagram to understand ratios
- Find unit rate
- Simplify a complex fraction and find the unit rate
- Convert unit rates using dimensional analysis
- Identify proportional and non-proportional relationships using a table
- Graph proportional and non-proportional relationships
- Identify proportional and non-proportional relationships using a graph
- Write proportion problems
- Solve proportion problems
- Use unit rate
- Find constant rate of change (unit rate) using a table
- Find constant rate of change (unit rate) using a graph
- Find constant rate of change (unit rate) using an equation
- Find constant rate of change (unit rate) using diagrams
- Find constant rate of change (unit rate) using verbal descriptions
- Understand and find slope as vertical change/horizontal change and rise/run
- Determine direct variation
- Use bar diagrams to represent fractions and percents
- Find the percent of a number
- Use percents greater than 100 and percents less than 1
- Estimate the percent of a number
- Use the percent proportion (part/whole) to find: part, whole, percent
- Use the percent equation to find: part, whole, percent
- Determine Reasonable Answers
- Find percent change and percent error using an equation
- Find Sales Tax and Total Cost
- Find tips and Markups
- Find Sale Price and Original Cost
- Find simple interest using an equation for savings,

Skills

*Transferable skills that students must be able to **DO***

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

loans and credit cards

- Technology: Compound interest-spreadsheet
- Scale Drawings (covered in Unit 3)

Vocabulary

Complex fraction
Constant of proportionality
Constant rate of change
Constant of variation
Coordinate plane
Cross products
Dimensional analysis
Direct variation
Discount
Equivalent ratios
Gratuity
Markup
Markdown
Non-proportional
Percent Equation
Percent Error
Percent of change
Percent of decrease
Percent of increase
Percent proportion
Principle
Proportion
Proportional
Ordered Pair
Origin
Quadrant
Rate
Rate of Change
Sales Tax
Selling Price
Simple Interest
Slope
Tip
Unit Rate
x-axis
x-coordinate
y-axis
y-coordinate

Core Learning Activities

- VersaTiles
- Inquiry Lab: Unit Rates
- Problem Solving Investigation: The Four Step Plan
- Inquiry Lab: Proportional and Non Proportional Relationships
- Inquiry Lab: Rate of Change
- Inquiry Lab: Percent Diagrams
- Inquiry Lab: Find Percents
- Problem-Solving Investigation: Determine Reasonable Answers
- Inquiry Lab: Rate of Change
- Inquiry Lab: Compound Interest

Resources

Professional & Student

- Professional
Teacher-share
Textbook – Prentice Hall Mathematics Course 2 and 3
PLC
Students
Textbook – Prentice Hall Mathematics Course 2 and 3
Online textbook
Glencoe Math-Course 2: Volume 1
- Review: Function using input->rule->output
- Foldable- key concept: table, graph, equation
- Foldable- key concept: percent equation and proportion
- Study skill: Draw a picture
- graph paper
- Graphic Organizer-slope
- Graphic Organizer-compare and contrast tax and discount

- Rate Yourself
- Reflect On Essential Question
- Quick check
- Foldable

<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
<p>Become a travel expert performance task Summative: Group Project</p> <p>Unit 4 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments</p> <p>Exit Tickets available on teacher-share Formative: Other written assessments</p> <p>Unit 4 Assessment Summative: Written Test</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Algebraic Reasoning II

Collaboration Math Grade 7 | Grade 7 | Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 3:18PM

Unit: Algebraic Reasoning II (Week 24, 7 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Rewriting an expression in different forms can show how the quantities in a problem are related.
2. Mathematical expressions represent relationships.

Essential Question(s)

1. How can you communicate mathematical ideas effectively?
2. How can you use numbers and symbols to represent mathematical ideas?
3. What does it mean to say that two quantities are equal?
4. How can relationships be expressed symbolically?
5. What strategies can be used to solve for unknowns?
6. How can we express real-world situations mathematically?
7. Where in the real world would I find patterns?
8. When are algebraic and numeric expressions used?
9. Why do we use variables?

Guiding Questions

Factual, Conceptual, Provocative

1. When do you use a variable?
2. How do you know which operation symbol to use?
3. When do you use an equal sign?
4. When do you use an inequality symbol?
5. How can we use variables to represent unknowns in real-world situations?
6. How can we use properties of operations to solve two-step equations and inequalities?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Expressions & Equations

7.EE.A. Use properties of operations to generate equivalent expressions.

- 7.EE.A.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
- 7.EE.A.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

- 7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Use variables (3)
- Construct simple equations and inequalities (3)
- Solve problems in context (4, 5)
- Simple equations
- Simple inequalities
- Reason about quantities (4)
- Compare solutions (2)
- Graph inequality (3)
- Interpret inequality (2)
- Apply properties of operations (3)
- Factor linear expressions with rational coefficients (4)
- Expand Linear expressions with rational coefficients (3)
- Write an expression in different forms (3)
- Understand how rewriting an expression in different forms can show how the quantities in a problem are related (2)

Content/Topics

Skills

*Critical content that students must **KNOW***

- Write Algebraic Expressions
- Evaluate Algebraic Expressions
- Describe and Extend Sequences
- Properties of Operations
- Use the Distributive Property
- Identify Parts of an Expression
- Simplify Algebraic Expressions
- Add Linear Expressions
- Subtract Linear Expressions
- Use Additive Inverse to Subtract
- Factor Linear Expressions
- Find the GCF of Monomials
- Solve One-Step Equations
- Properties of Equality
- Solve Equations with Rational Coefficients
- Solve Two-Step Equations
- Solving One and Two-Step Inequalities
- Properties of Inequality
- Graph Solution to Inequality

Vocabulary:

Addition Property of Equality
Addition Property of Inequality
Additive Identity Property
Algebra
Algebraic Expression
Arithmetic Sequence
Associative Property
Coefficient
Commutative Property
Constant
Counterexample
Define a Variable
Distributive Property
Division Property of Equality
Division Property of Inequality
Equation
Equivalent Expressions
Equivalent Equations
Factor
Factored Form
Like Terms
Linear Expression
Monomial
Multiplicative Identity Property
Multiplicative Property of Equality
Multiplicative Property of Inequality
Multiplicative Property of Zero
Property
Sequence
Simplest Form
Solution
Subtraction Property of Equality
Subtraction Property of Inequality
Term
Two-Step Equation
Two-Step Inequality
Variable

*Transferable skills that students must be able to **DO***

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

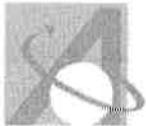
Core Learning Activities	Resources	
Inquiry Lab: Sequences Problem-Solving Investigation: Make a Table Inquiry Lab: Factor Linear Expressions Inquiry Lab: Solve One-Step Addition and Subtraction Problems Inquiry Lab: Multiplication Equations with Bar Diagrams Inquiry Lab: Solve Equations with Rational Coefficients Inquiry Lab: Solve Two-Step Equations Inquiry Lab: More Two-Step Equations Problem-Solving Investigation: Work Backward Inquiry Lab: Solve Inequalities "Expressions Activity" "Food Expressions Activity" VersaTiles Algebra Tiles	<i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Study Skill: Reading Math (key words) - Foldable- Linear Expressions - Foldable- Solve Two-Step Equations - Box sheets - Graphic Organizer-Properties - Rate Yourself - Reflect On Essential Question - Quick check - Foldable	
<u>Assessments (Titles)</u>	Graduation Standards	Interdisciplinary Connections
Unit 5 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments Exit Tickets available on teacher-share Formative: Other written assessments "School Dance DJ" performance task Summative: Group Project Unit 5 Assessment Summative: Written Test	<u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Inferences about Populations

Collaboration Math Grade 7 Grade 7 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 3:19PM

Unit: Inferences about Populations (Week 31, 5 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population.
2. Understand that random sampling tends to produce representative samples and support valid inferences.
3. The way data is collected, organized and displayed influences interpretation

Essential Question(s)

1. How do I interpret data for a specific population and draw conclusions?
2. What inferences can I make from sample data?
3. How do you know which type of graph to use when displaying data?

Guiding Questions

Factual, Conceptual, Provocative

1. When is a bar graph used to display data?
2. When is a line graph used to display data?
3. When is a double dot plot used to display data?
4. When is a double box plot used to display data?
5. What is the benefit of looking at only a sample of the population?
6. When is a sample valid?
7. Why is random sampling effective?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Statistics & Probability

7.SP.A. Use random sampling to draw inferences about a population.

- 7.SP.A.1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- 7.SP.A.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

7.SP.B. Draw informal comparative inferences about two populations.

- 7.SP.B.3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Understand and Use Statistics - 2
- Examine a Sample of the Population - 2,3
- Generalize information about a population - 4,5
- Determine if a sample is representative/valid - 3,4
- Use measures of center and measures of variability for numerical data from random samples - 4,5
- Draw informal comparative inferences
- Use data from a random sample
- Draw inferences about a population - 4,5
- Generate multiple samples of the same size - 3
- Gauge the variation in estimates or predictions
- Express and Calculate the difference between the centers of two numerical data distributions as a multiple of a measure of variability – mean absolute deviation - 3

<p>between the centers by expressing it as a multiple of a measure of variability.</p> <ul style="list-style-type: none"> 7.SP.B.4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. 	
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> Make Predictions Using Ratios Make Predictions Using Equations Biased and Unbiased Samples Use Multiple Data Samples Use Sampling to Predict Use a Graph Collect Data Identify a Misleading Graph Identify Misleading Statistics Compare Two Populations Recognize Visual Overlap Calculate Difference in Means Calculate Mean Absolute Deviation Select an Appropriate Display <p>Vocabulary: Biased Sample Convenience Sample Difference in Means Double Box Plot Double Dot Plot Mean Absolute Deviation Population Sample Simple Random Sample Statistics Survey Systematic Random Sample Unbiased Sample Visual Overlap Voluntary Response Sample</p>	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.
<p>Core Learning Activities</p> <p>Inquiry Lab: Multiple Samples of Data Problem-Solving Investigation: Use a Graph Inquiry Lab: Collect Data Inquiry Lab: Visual Overlap of Data Distributions Market Research Performance Assessment</p>	<p>Resources</p> <p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Study Skill: Writing Math - Graph paper - Graphic Organizer-Biased and Unbiased Samples - Rate Yourself - Reflect On Essential Question - Quick check</p>

<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
<p>Unit 6 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments</p> <p>Exit Tickets available on teacher-share Formative: Other written assessments</p> <p>Unit 6 Assessment Summative: Written Test</p> <p>Market Research performance task Summative: Group Project</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none">1. Reason abstractly and quantitatively2. Use appropriate tools strategically3. Attend to precision4. Look for and express regularity in repeated reasoning.5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks6. Analyze, evaluate and use information responsibly to create a solution and/or a product7. Evaluate both the process and the product

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Probability

Collaboration Math Grade 7 Grade 7 | Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 3:19PM

Unit: Probability (Week 36, 5 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Understand probability measures the likelihood of an event to occur.
2. Understand probability helps to analyze the risk in a situation and make informed decisions.
3. Understand probability is used to make inferences and predictions about a situation.

Essential Question(s)

1. How can you find the number of outcomes of more than one event?
2. How can you predict the outcome of future events?
3. How can you determine the likelihood of an event?
4. How do independent and dependent events differ?
5. What is the difference between theoretical and experimental probability?

Guiding Questions

Factual, Conceptual, Provocative

1. How can you use theoretical probability to predict the outcome of future events?
2. How can you use experimental probability to predict the outcome of future events?
3. How can you use sample space to predict the outcome of future events?
4. How can you use simulation to predict the outcome of future events?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Statistics & Probability

7.SP.C. Investigate chance processes and develop, use, and evaluate probability models.

- 7.SP.C.5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
- 7.SP.C.6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
- 7.SP.C.7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
- 7.SP.C.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
- 7.SP.C.7b. Develop a probability model (which may not be uniform) by observing frequencies in data

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Develop and use
 - a uniform probability model – 3,6
 - a probability model which may not be uniform – 3,6
- Find
 - probabilities of simple events - 3
 - probability of compound events using organized lists, tables, tree diagrams and simulation - 3
 - frequencies for compound events - 3
- Compare probabilities from a model to observed frequencies - 2
- Explain possible sources of the discrepancy - 5
- Observe frequencies in data - 1
- Understand - 2
 - probability of a chance event is a number between 0 and 1
 - probability of a compound event is the fraction of outcomes in the sample space
- Predict approximate relative frequency - 5

<p>generated from a chance process.</p> <ul style="list-style-type: none"> • 7.SP.C.8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. • 7.SP.C.8a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. • 7.SP.C.8b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. • 7.SP.C.8c. Design and use a simulation to generate frequencies for compound events. 	
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> • Determine Probability of Simple Events • Find and use Relative Frequency • Experimental and Theoretical Probability • Predict Future Events • Determine Probability of Compound Events • Find a Sample Space • Find Probability • Simulations • Model Equally Likely Outcomes • Model Unequally Likely Outcomes • Fundamental Counting Principle • Permutations • Probability of Independent Events • Probability of Dependent Events <p>Vocabulary: Complementary Events Compound Events Dependent Events Chance Events (old-Experimental Probability) Fair Fundamental Counting Principle Independent Events Outcome Permutation Probability Random Relative Frequency Sample Space Simple Event Simulation Theoretical Probability Tree Diagram Uniform Probability Model Unfair</p>	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> • 2. Work independently and collaboratively to solve problems and accomplish goals. • 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.
<p>Core Learning Activities</p> <p>Inquiry Lab: Relative Frequency</p>	<p>Resources</p> <p><i>Professional & Student</i></p>

Problem-Solving Investigation: Act it Out Inquiry Lab: Fair and Unfair Games Inquiry Lab: Simulate Compound Events Inquiry Lab: Independent and Dependent Events Career in Medicine	Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Graphic Organizer-Outcomes - Foldable – Probability Example/Picture - Rate Yourself - Reflect On Essential Question - Quick check - Foldable
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<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
Unit 7 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments Exit Tickets available on teacher-share Formative: Other written assessments Unit 7 Assessment Summative: Written Test	<u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Addition and Subtraction with Rational Numbers

Collaboration Math Grade 7 Accelerated Grade 7 Mathematics Newtown Middle School 2014-2015

Wednesday, November 12, 2014, 2:48PM



Unit: Addition and Subtraction with Rational Numbers (Week 1, 3 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. There are many ways to represent a number.
2. Number sense develops through experience with real-world situations.
3. Subtraction is an additive inverse.

Essential Question(s)

1. How can mathematical ideas be represented?
2. What happens when you add and subtract integers?
3. What happens when you add and subtract fractions?
4. What are different ways that numbers can be represented and how do they relate to each other?
5. How do I determine the best numerical representation for a given situation?

Guiding Questions

Factual, Conceptual, Provocative

1. How do you add integers
2. How do you subtract integers?
3. How do you add fractions?
4. How do you subtract fractions?
5. How are numbers used in daily life?
6. How can we use the number line to represent operations in real-world situations?
7. What are different ways you can rewrite the same number sentence?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, The Number System

7.NS.A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

- 7.NS.A.1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
- 7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

Add and subtract rational numbers (3)
 Describe opposites quantities (1)
 Understand positive or negative direction (2)
 Show additive inverses (1)
 Interpret sums in context (2)
 Understand subtraction as additive inverses (2)
 Show absolute value (2)
 Apply absolute value principle in context (3)
 Apply properties of operations as strategies (3)
 Solve with or without context (3, 4)
 Apply properties of operations to calculate (3)
 Convert between equivalent forms (2)
 Assess reasonableness of answers (5)
 Use mental computation and estimation strategies

Content/Topics

Critical content that students must KNOW

- Categorize and Define all Rational Numbers
- Compare and order Rational Numbers
- Number Line, Opposites, and Absolute Value
- Using Estimation Strategies
- Properties of Addition
- Additive Inverse

Skills

Transferable skills that students must be able to DO

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

<ul style="list-style-type: none"> • Mixed Numbers and Improper Fractions • Write Fractions as Decimals • Write Decimals as Fractions • Adding and Subtracting Integers • Add and Subtract Like Fractions • Add and Subtract Unlike Fractions • Add and Subtract Mixed Numbers • Adding and Subtracting Positive and Negative Decimals <p>Vocabulary: Integer Negative Integer Positive Integer Graph Absolute Value Opposites Additive Inverse Common Denominator Least Common Denominator Like Fractions Rational Numbers Unlike Fraction</p>		
<p>Core Learning Activities</p> <p>Spreadsheet scramble Flipping for Integers Game VersaTiles Inquiry Lab: Add Integers-Football Field Inquiry Lab: Subtract Integers-Dolphin Swim Inquiry Lab: Distance on a Number Line Problem Solving Investigation: Look for a Pattern Inquiry Lab: Rational Numbers on the Number Line-Graph Inquiry Lab: Add and Subtract on the Number Line-Baseball Problem Solving Investigation: Draw a Diagram</p>	<p>Resources</p> <p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 1 - Graphic Organizer-Integer - Number Lines - Graphic Organizer-Opposites - Rate Yourself - Reflect On Essential Question - Quick check - Foldable</p>	
<p>Assessments (Titles)</p> <p>Unit 1 Student Self-Reflection Form re: essential and guiding question Summative: Self Assessment</p> <p>Exit Tickets Formative: Other written assessments</p> <p>Keeping Track of the Distance Problem Formative: Other written assessments</p> <p>Postcard Collection Problem Formative: Other written</p>	<p>Graduation Standards</p> <p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<p>Interdisciplinary Connections</p> <ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product

<p>assessments</p> <p>Summative Unit Test Summative: Written Test</p> <p>“Trail Mix” Problem Summative: Group Project Performance Task</p> <p>The Fraction Maze” Summative: Group Project</p>		<p>7. Evaluate both the process and the product</p>
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Real Numbers

Collaboration **Math Grade 7 Accelerated** Grade 7 | Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 2:49PM

Unit: Real Numbers (Week 4, 5 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Operations create relationships among numbers.
2. Acknowledge the reasonableness of a quantitative outcome from using good number sense and estimation strategies.

Essential Question(s)

1. What is the difference between rational and irrational numbers?
2. What makes estimation reasonable?
3. Where would you find the very big and very small numbers?
4. How would you most efficiently use very big and very small numbers?
5. When is it acceptable to approximate versus being exact?

Guiding Questions

Factual, Conceptual, Provocative

1. This number is an example of which type of number?
2. Which type of number converts to a fraction or a decimal?
3. What is a perfect square/perfect cube?
4. What is a good process to find a reasonable approximation of an irrational number?
5. How do we apply the properties of integers to exponents?
6. How do we apply Scientific Notation in the Real World?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, The Number System

8.NS.A. Know that there are numbers that are not rational, and approximate them by rational numbers.

- 8.NS.A.1. Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers are called irrational.
- 8.NS.A.2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions

CCSS: Mathematics, CCSS: Grade 8, Expressions & Equations

8.EE.A. Work with radicals and integer exponents.

- 8.EE.A.1. Know and apply the properties of integer exponents to generate equivalent numerical expressions.
- 8.EE.A.2. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

KNOW (rational and irrational numbers) - 2

UNDERSTAND (decimal expansion) -2

SHOW (decimal expansion repeats) -2

CONVERT (repeating decimal expansion to a rational number) -3

USE: **integer power of 10**

ESTIMATE (large or small quantities) - 3

EXPRESS (magnitude of numbers using powers of 10) - 2

rational approximations or irrational numbers

COMPARE (sizes or rational numbers) - 1

LOCATE (rational numbers approximately on the number line) - 2

ESTIMATE (value of expressions) - 2

Square root and cube root symbols

REPRESENT (solutions to equations) - 2

EVALUATE (square roots of perfect squares and cubed roots of

perfect cubes) - 1,3

Scientific Notation

REPRESENT (very large and very small numbers) - 2

CHOOSE (units of appropriate size) - 3

KNOW/APPLY (properties of integer exponents) - 3

GENERATE (equivalent numerical expressions) - 3

<p>and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.</p> <ul style="list-style-type: none"> 8.EE.A.3. Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. 8.EE.A.4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. 	<p>CALCULATE/CONVERT (numbers expressed in scientific notation/decimal form) - 4 INTERPRET (scientific notation generated by technology) - 3</p>
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<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ol style="list-style-type: none"> 1. Conversion of terminating and repeating decimals to fractions 2. Identify irrational numbers 3. Identify perfect squares/cubes 4. State the square/cubed root for perfect squares/cubes 5. Approximate square/cubed roots 6. Powers (x^{\pm} rules, power to a power, fractional, zero and negative exponents) 7. Scientific Notation (convert and compare, products and quotients) 	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.
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<p>Core Learning Activities</p> <ol style="list-style-type: none"> 1. Web Quest 2. TI-73 calculators 3. Versatiles: Real Numbers , Expressions & Equations 	<p>Resources</p> <p><i>Professional & Student</i> Professional Students: access to computers/internet access to TI-73 calculator Versatiles</p>
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<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
<p>Quarter 1 Test Summative: Written Test A test of all of the material for quarter 1, given by every grade 8 math teacher.</p> <p>Common Formative Assessment Formative: Written Test One of 6 Common Formative Assessments given during the unit to track student growth for each standard.</p> <p>Student Reflection Summative: Written Report Students will complete a pre and post written reflection on the topics covered</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create

in the unit. Students will evaluate their individual performance and compare it to the evaluation by the instructor.

Exponent Web Quest

Summative: Technology Project

Students will complete a webquest on the use of exponents in the real world.

a solution and/or a product
7. Evaluate both the process and the product

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Multiplication and Dividing with Rational Numbers

Collaboration **Math Grade 7 Accelerated** Grade 7 | Mathematics | Newtown Middle

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Wednesday, November 12, 2014, 2:50PM



Unit: Multiplication and Dividing with Rational Numbers (Week 9, 4 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. The relationships among numbers and number systems form the foundations of number sense and mathematics communication.

Essential Question(s)

1. How can mathematical ideas be represented?
2. What happens when you multiply and divide integers?
3. What happens when you multiply and divide fractions?
4. Why are different representations of the same number needed to solve different types of problems?
5. Why is there a specific order to the procedures used in operations?
6. How do the mathematical operations relate to one another?
7. How do I know which computational method to use?

Guiding Questions

Factual, Conceptual, Provocative

1. How do you multiply integers?
2. How do you divide integers?
3. How do you multiply fractions?
4. How do you divide fractions?
5. How do I apply the properties of multiplication to fractions?
6. How can we assess the reasonableness of answers using mental computation and estimation strategies?
7. Why do we need to apply rules in mathematics?
8. What are different ways you can rewrite the same number sentence?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, The Number System

7.NS.A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

- 7.NS.A.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- 7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

CCSS: Mathematics, CCSS: Grade 7, Expressions & Equations

7.EE.A. Use properties of operations to generate equivalent expressions.

- 7.EE.A.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.B. Solve real-life and mathematical problems using

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

Multiply and divide rational numbers (3)
 Understand/develop rules for multiplying signed numbers (2)
 Understand every quotient of integers with non-zero divisor is a rational number (2)
 Interpret products and quotients in context (6)
 Apply properties of operations as strategies (3)
 Solve multi-step problems in context (2)
 Apply properties of operations to calculate (4)
 Convert between equivalent forms of rational numbers (3)
 Understand the relationship between equivalent forms of expression (2)
 Assess reasonableness of answers (5)
 Use mental computation and estimation strategies

<p>numerical and algebraic expressions and equations.</p> <ul style="list-style-type: none"> 7.EE.B.3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. 		
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> Use Estimation Strategies Properties of Multiplication Multiplicative Inverse Distributive Property Multiply and Divide Integers with Different Signs Multiply and Divide Integers with the Same Sign Convert Fractions and Decimals Multiply and Divide Positive and Negative Decimals Multiply and Divide Positive and Negative Fractions Multiply and Divide Positive and Negative Mixed Numbers Convert between systems Orders of Operation and Exponents <p>Vocabulary: Multiplicative Property of Zero Distributive Property Multiplicative Identity Repeating Decimal Terminating Decimal Bar Notation</p>	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving. 	
<p>Core Learning Activities</p> <p>Integer Contig Decimal Contig Hot Number VersaTiles Inquiry Lab: Multiply Integers Inquiry Lab: Use Properties to Multiply-Scientific Properties</p>	<p>Resources</p> <p><i>Professional & Student</i></p> <p>Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 1 - Graphic Organizer-Multiply/Divide Integers - Number Lines - Graphic Organizer-Fraction Rules - Rate Yourself - Reflect On Essential Question - Quick check - Foldable</p>	
<p>Assessments (Titles)</p> <p>Unit 2 Student Self-Reflection Form</p>	<p>Graduation Standards</p> <p>Information Literacy</p>	<p>Interdisciplinary Connections</p>

<p>re: essential and guiding questions Summative: Self Assessment</p> <p>Unit 2 Exit Tickets Formative: Other written assessments</p> <p>Common Unit Test Summative: Written Test</p> <p>“The Decimal Maze” Performance Task Summative: Group Project</p> <p>“Kneading Bread” Performance Task Summative: Group Project</p>	<p><u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product
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Pythagorean Theorem

Collaboration **Math Grade 7 Accelerated** Grade 7 Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 2:50PM

Unit: Pythagorean Theorem (Week 13, 3 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Pythagorean Theorem is one of the most important relationships in all mathematics.
2. Applying Pythagorean Theorem helps you solve interesting problems with distance and length.

Essential Question(s)

1. Where in the real-world can you apply Pythagorean Theorem
2. What is the meaning of Pythagorean Theorem?
3. How are real numbers and the Pythagorean Theorem used in every day life?
4. What is the relationship of Pythagorean Theorem and slope
5. Where does Pythagorean Theorem apply in a 3-D figure?

Guiding Questions

Factual, Conceptual, Provocative

1. Will the Pythagorean Theorem work for triangles that are not right triangles?
2. How can you use any two sides of a right triangle to find the third side?
3. How can you use the Pythagorean Theorem to find the length of any line segment on a coordinate plane that is not vertical or horizontal?
4. How can you use Pythagorean Theorem to determine the diagonal of a 3-D figure?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Geometry

8.G.B. Understand and apply the Pythagorean Theorem.

- 8.G.B.6. Explain a proof of the Pythagorean Theorem and its converse.
- 8.G.B.7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
- 8.G.B.8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

1. Explain a proof of the Pythagorean Theorem and its converse. -4
2. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. - 3
3. Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane - 3

Content/Topics

Critical content that students must KNOW

1. Explain a proof of Pythagorean Theorem and its converse.
2. Find missing side in a right triangle (leg and Hypotenuse).
3. Find the distance between 2 points using Pythagorean Theorem.
4. Find the length of the diagonal of a 3-D Figure
5. Find the slant height of a cone and pyramid using

Skills

Transferable skills that students must be able to DO

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

the Pythagorean theorem.		
Core Learning Activities TI-73 calculators Pythagorean Project VersaTiles: Algebra 1 & Expressions & Equations		Resources <i>Professional & Student</i> Professional: Text: <u>Prentice Hall Math Course 3</u> Ancillaries provided by publisher Math Department staff generated materials Math Department reference books Internet resources Students: access to computers/internet www.phschool.com www.drmath.com www.purplemath.com www.kahnacademy.org Text: <u>Prentice Hall Math Course 3</u> Access to TI-73 calculator VersaTiles
Assessments (Titles) Quarterly Assessment Summative: Written Test Students will take a grade level assessment at the end of each marking period covering all of the topics learned in class. Common Formative Assessments (4) Formative: Written Test Students will take 4 common formative assessments to measure mastery of the different topics within the unit. 1. Find missing side of a right triangle 2. Distance between 2 points 3. Proving right triangles 4. Application of Pythagorean Theorem KWL Chart Formative: Written Report Students will complete a KWL chart at the beginning of the unit to demonstrate pre-knowledge of the concepts being taught. Student Reflection Summative: Written Report Students will provide a self evaluation report analyzing their growth from pre-assessment to end of unit assessment. Students will compare their analysis to that of the teacher.	Graduation Standards <u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u>	Interdisciplinary Connections 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product



Two and Three Dimensional Geometry

Collaboration **Math Grade 7 Accelerated** Grade 7 | Mathematics | Newtown Middle School | 2014-2015

Wednesday, November 12, 2014, 2:51PM



Unit: Two and Three Dimensional Geometry (Week 16, 4 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Geometry and spatial sense offer ways to visualize, to interpret, and to reflect on our physical environment.
2. Objects can be described and compared using their geometric properties.

Essential Question(s)

1. How can you use different measurements to solve real-life problems?
2. How does geometry help us describe real-world objects?
3. How do measurements help you describe real-world objects?
4. How are geometric properties used to solve problems in everyday life?
5. How can plane and solid shapes be described?
6. How do we describe, sort, and classify figures and solids?

Guiding Questions

Factual, Conceptual, Provocative

1. How do polygons help us describe real-world objects?
2. How do polyhedrons help us describe real-world objects?
3. How do you use circumference to measure real-world objects?
4. How do you use area to measure real-world objects?
5. How do you use volume to measure real-world objects?
6. How do you use surface area to measure real-world objects?
7. How can I solve real-life and mathematical problems involving angle measure, area, surface area, and volume?
8. How can I draw, construct, and describe geometrical figures and describe the relationships between them?
9. How are geometric figures constructed?
10. How do three-dimensional objects relate to its two-dimensional counterpart?
11. What is the relationship between area and circumference of a circle?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Geometry

7.G.A. Draw construct, and describe geometrical figures and describe the relationships between them.

- 7.G.A.2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
- 7.G.A.3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Know and Develop formulas - 2,3
- Solve problems using formulas - 3
- Give and Derive informally the relationship between circumference and area of a circle - 4
- Solve with and without context
- Draw and Construct geometric shapes with given conditions - 3
- Use rulers, protractors, technology - 3
- Describe two-dimensional figures that result from plane sections of three-dimensional figures - 2
- Write and Solve problems using equations to find an

<p>rectangular pyramids.</p> <p>7.G.B. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</p> <ul style="list-style-type: none"> 7.G.B.4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. 7.G.B.5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. 7.G.B.6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. 	<p>unknown angle in a figure - 4,5</p>
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Content/Topics	Skills
<p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> Classify Angles Name and Identify Angles Find a Missing Measure Pairs of Angles – Complementary and Supplementary Classify Triangles Angles of a Triangle (180°) Use a Scale Drawing or a Scale Model Find a Scale Factor Draw Three-Dimensional Figures Identify Cross Sections Identify Three-Dimensional Figures Radius and Diameter of a Circle Find Circumference and Area of a Circle Approximate Circumference and Area of a Circle Area of Composite Figures Volume of Right Prisms Volume and Height of Pyramids Surface Area and Nets of Prisms Surface Area and Nets of Pyramids Volume and Surface Area of Composite Figures <p>Vocabulary: Acute Angle Acute Triangle Adjacent Angles Base Center Circle Circumference Complementary Angles Composite Figure Cone Congruent Congruent Segments</p>	<p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

<p>Coplanar Cross Section Cylinder Diagonal Diameter Edge Equilateral Triangle Face Isosceles Triangle Lateral Face Lateral Surface Area Obtuse Angle Obtuse Triangle Pi Plane Polyhedron Prism Pyramid Radius Regular Pyramid Right Angle Right Triangle Scale Scale Drawing Scale Factor Scale Model Scalene Triangle Semicircle Slant Height Straight Angle Supplementary Angles Surface Area Triangle Vertex Vertical Angles Volume</p>	
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Core Learning Activities	Resources
<p>"Fence for Fido" "Circle Activity" "Rectangle Problem" "Play Dough Cross Sections" VersaTiles Inquiry Lab: Create Triangles Inquiry Lab: Draw Triangles Problem Solving Investigation: Make a Model Inquiry Lab: Investigate Online Maps and Scale Drawings Inquiry Lab: Scale Drawings Inquiry Lab: Circumference Inquiry Lab: Area of Circles Problem Solving Investigation: Solve a Simpler Problem Inquiry Lab: Volume of Pyramids Inquiry Lab: Nets of Three-Dimensional Figures Inquiry Lab: Relate Surface Area and Volume Inquiry Lab: Composite Figures</p>	<p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Model Sheets - Formulas - Graphic Organizers - Rate Yourself - Reflect On Essential Question - Quick check - Foldable</p>

Assessments (Titles)	Graduation Standards	Interdisciplinary Connections
<p>Unit 3 Student Self-Reflection Form re: essential and guiding questions Summative: Other written</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u></p>	<p>1. Reason abstractly and quantitatively</p>

assessments	<u>Written Performance</u>	
<p>Exit Tickets for Unit 3 Formative: Other written assessments</p> <p>Design Your Own Park Performance Task Summative: Group Project</p> <p>Unit 3 test Summative: Written Test</p>		<ol style="list-style-type: none"> 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Proportional Relationships



Math Grade 7 Accelerated Grade 7 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 2:52PM

Unit: Proportional Relationships (Week 20, 4 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Mathematics can be used to describe change and model real world situations.

Essential Question(s)

1. How can you use mathematics to describe change, and model real world situations?
2. How can you show that two objects are proportional?
3. How can percent help you understand situations involving money?

Guiding Questions

Factual, Conceptual, Provocative

1. How can you solve a proportion?
2. How can you show that two objects are proportional with a table?
3. How can you show that two objects are proportional with a graph?
4. How can you show that two objects are proportional with an equation?
5. How is rate a measure of one quantity per unit of another quantity?
6. Give an example of a real-world situation in which you would find the percent of a number.
7. Explain how two amounts of change can be the same but the percents of change can be different.

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Ratios & Proportional Relationships

7.RP.A. Analyze proportional relationships and use them to solve real-world and mathematical problems.

- 7.RP.A.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
- 7.RP.A.2. Recognize and represent proportional relationships between quantities.
- 7.RP.A.2a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- 7.RP.A.2b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- 7.RP.A.2c. Represent proportional relationships by equations.
- 7.RP.A.2d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Recognize proportional relationships – 1,2
- Represent proportional relationships in a variety of ways - 3
- Decide proportional relationship - 5
- Test equivalent ratios - 5
- Observe graph - 1
- Identify constant of proportionality - 4
- Explain point (x,y) - 2
- Solve multi-step problems – 4,5
- Compute unit rates - 3
- Compute actual lengths/areas from scale drawings - 3
- Reproduce a scale drawing at a different scale – 2 (covered in unit 3)

- 7.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.

CCSS: Mathematics, CCSS: Grade 7, Geometry

7.G.A. Draw construct, and describe geometrical figures and describe the relationships between them.

- 7.G.A.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

Content/Topics

*Critical content that students must **KNOW***

- Use bar diagram to understand ratios
- Find unit rate
- Simplify a complex fraction and find the unit rate
- Convert unit rates using dimensional analysis
- Identify proportional and non-proportional relationships using a table
- Graph proportional and non-proportional relationships
- Identify proportional and non-proportional relationships using a graph
- Write proportion problems
- Solve proportion problems
- Use unit rate
- Find constant rate of change (unit rate) using a table
- Find constant rate of change (unit rate) using a graph
- Find constant rate of change (unit rate) using an equation
- Find constant rate of change (unit rate) using diagrams
- Find constant rate of change (unit rate) using verbal descriptions
- Understand and find slope as vertical change/horizontal change and rise/run
- Determine direct variation
- Use bar diagrams to represent fractions and percents
- Find the percent of a number
- Use percents greater than 100 and percents less than 1
- Estimate the percent of a number
- Use the percent proportion (part/whole) to find: part, whole, percent
- Use the percent equation to find: part, whole, percent
- Determine Reasonable Answers
- Find percent change and percent error using an equation
- Find Sales Tax and Total Cost
- Find tips and Markups
- Find Sale Price and Original Cost
- Find simple interest using an equation for savings,

Skills

*Transferable skills that students must be able to **DO***

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

loans and credit cards

- Technology: Compound interest-spreadsheet
- Scale Drawings (covered in Unit 3)

Vocabulary

Complex fraction
Constant of proportionality
Constant rate of change
Constant of variation
Coordinate plane
Cross products
Dimensional analysis
Direct variation
Discount
Equivalent ratios
Gratuity
Markup
Markdown
Non-proportional
Percent Equation
Percent Error
Percent of change
Percent of decrease
Percent of increase
Percent proportion
Principle
Proportion
Proportional
Ordered Pair
Origin
Quadrant
Rate
Rate of Change
Sales Tax
Selling Price
Simple Interest
Slope
Tip
Unit Rate
x-axis
x-coordinate
y-axis
y-coordinate

Core Learning Activities

- VersaTiles
- Inquiry Lab: Unit Rates
- Problem Solving Investigation: The Four Step Plan
- Inquiry Lab: Proportional and Non Proportional Relationships
- Inquiry Lab: Rate of Change
- Inquiry Lab: Percent Diagrams
- Inquiry Lab: Find Percents
- Problem-Solving Investigation: Determine Reasonable Answers
- Inquiry Lab: Rate of Change
- Inquiry Lab: Compound Interest

Resources

Professional & Student

- Professional
Teacher-share
Textbook – Prentice Hall Mathematics Course 2 and 3
PLC
Students
Textbook – Prentice Hall Mathematics Course 2 and 3
Online textbook
Glencoe Math-Course 2: Volume 1
- Review: Function using input->rule->output
- Foldable- key concept: table, graph, equation
- Foldable- key concept: percent equation and proportion
- Study skill: Draw a picture
- graph paper
- Graphic Organizer-slope
- Graphic Organizer-compare and contrast tax and discount

- Rate Yourself
- Reflect On Essential Question
- Quick check
- Foldable

<u>Assessments (Titles)</u>	Graduation Standards	Interdisciplinary Connections
<p>Become a travel expert performance task Summative: Group Project</p> <p>Unit 4 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments</p> <p>Exit Tickets available on teacher-share Formative: Other written assessments</p> <p>Unit 4 Assessment Summative: Written Test</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Algebraic Reasoning II

Collaboration Math Grade 7 Accelerated Grade 7 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 2:52PM

Unit: Algebraic Reasoning II (Week 24, 4 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Rewriting an expression in different forms can show how the quantities in a problem are related.
2. Mathematical expressions represent relationships.

Essential Question(s)

1. How can you communicate mathematical ideas effectively?
2. How can you use numbers and symbols to represent mathematical ideas?
3. What does it mean to say that two quantities are equal?
4. How can relationships be expressed symbolically?
5. What strategies can be used to solve for unknowns?
6. How can we express real-world situations mathematically?
7. Where in the real world would I find patterns?
8. When are algebraic and numeric expressions used?
9. Why do we use variables?

Guiding Questions

Factual, Conceptual, Provocative

1. When do you use a variable?
2. How do you know which operation symbol to use?
3. When do you use an equal sign?
4. When do you use an inequality symbol?
5. How can we use variables to represent unknowns in real-world situations?
6. How can we use properties of operations to solve two-step equations and inequalities?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Expressions & Equations

7.EE.A. Use properties of operations to generate equivalent expressions.

- 7.EE.A.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
- 7.EE.A.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

7.EE.B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

- 7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Use variables (3)
- Construct simple equations and inequalities (3)
- Solve problems in context (4, 5)
- Simple equations
- Simple inequalities
- Reason about quantities (4)
- Compare solutions (2)
- Graph inequality (3)
- Interpret inequality (2)
- Apply properties of operations (3)
- Factor linear expressions with rational coefficients (4)
- Expand Linear expressions with rational coefficients (3)
- Write an expression in different forms (3)
- Understand how rewriting an expression in different forms can show how the quantities in a problem are related (2)

Content/Topics

Skills

Critical content that students must KNOW

- Write Algebraic Expressions
- Evaluate Algebraic Expressions
- Describe and Extend Sequences
- Properties of Operations
- Use the Distributive Property
- Identify Parts of an Expression
- Simplify Algebraic Expressions
- Add Linear Expressions
- Subtract Linear Expressions
- Use Additive Inverse to Subtract
- Factor Linear Expressions
- Find the GCF of Monomials
- Solve One-Step Equations
- Properties of Equality
- Solve Equations with Rational Coefficients
- Solve Two-Step Equations
- Solving One and Two-Step Inequalities
- Properties of Inequality
- Graph Solution to Inequality

Vocabulary:

Addition Property of Equality
Addition Property of Inequality
Additive Identity Property
Algebra
Algebraic Expression
Arithmetic Sequence
Associative Property
Coefficient
Commutative Property
Constant
Counterexample
Define a Variable
Distributive Property
Division Property of Equality
Division Property of Inequality
Equation
Equivalent Expressions
Equivalent Equations
Factor
Factored Form
Like Terms
Linear Expression
Monomial
Multiplicative Identity Property
Multiplicative Property of Equality
Multiplicative Property of Inequality
Multiplicative Property of Zero
Property
Sequence
Simplest Form
Solution
Subtraction Property of Equality
Subtraction Property of Inequality
Term
Two-Step Equation
Two-Step Inequality
Variable

Transferable skills that students must be able to DO

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

Core Learning Activities		Resources
Inquiry Lab: Sequences Problem-Solving Investigation: Make a Table Inquiry Lab: Factor Linear Expressions Inquiry Lab: Solve One-Step Addition and Subtraction Problems Inquiry Lab: Multiplication Equations with Bar Diagrams Inquiry Lab: Solve Equations with Rational Coefficients Inquiry Lab: Solve Two-Step Equations Inquiry Lab: More Two-Step Equations Problem-Solving Investigation: Work Backward Inquiry Lab: Solve Inequalities "Expressions Activity" "Food Expressions Activity" VersaTiles Algebra Tiles		<i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Study Skill: Reading Math (key words) - Foldable- Linear Expressions - Foldable- Solve Two-Step Equations - Box sheets - Graphic Organizer-Properties - Rate Yourself - Reflect On Essential Question - Quick check - Foldable
Assessments (Titles)	Graduation Standards	Interdisciplinary Connections
Unit 5 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments Exit Tickets available on teacher-share Formative: Other written assessments "School Dance DJ" performance task Summative: Group Project Unit 5 Assessment Summative: Written Test	<u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Congruence and Similarity



Math Grade 7 Accelerated Grade 7 Mathematics Newtown Middle

School 2014-2015

Wednesday, November 12, 2014, 2:53PM



Unit: Congruence and Similarity (Week 28, 4 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Reflections, translations, and rotations are actions produce congruent geometric figures in the world around us
2. Real-world objects can be measured indirectly using properties of similarity.
3. Patterns can help us draw conclusions
4. Rigid and non-rigid transformations play an important role in congruency and similarity.

Essential Question(s)

1. How can you determine congruency and similarity?
2. What are the similarities and differences between congruency and similarity of polygons?
3. How is a dilation always similar to an pre-image?
4. How do you use indirect measurement to find unknown lengths?
5. How are scale drawings and models used in everyday life?

Guiding Questions

Factual, Conceptual, Provocative

1. How do we apply the properties of triangles to prove congruency?
2. What are corresponding parts?
3. Are there any properties that will not prove congruency but will prove similarity?
4. How are proportions and similarity used in the real world

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Geometry

8.G.A. Understand congruence and similarity using physical models, transparencies, or geometry software.

- 8.G.A.1. Verify experimentally the properties of rotations, reflections, and translations:
- 8.G.A.1a. Lines are taken to lines, and line segments to line segments of the same length.
- 8.G.A.1b. Angles are taken to angles of the same measure.
- 8.G.A.1c. Parallel lines are taken to parallel lines.
- 8.G.A.2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
- 8.G.A.3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
- 8.G.A.4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- VERIFY (Experimentally properties of) - 2
 - Rotations
 - Reflections
 - Translations
 - Dilations
- UNDERSTAND (Congruency) - 2,3
- DESCRIBE (Sequence of rotations, reflections, translations) - 2,3
- UNDERSTAND (Similarity) - 2,3
- DESCRIBE (Sequence of rotations, reflections, translations, dilations) - 2
- DESCRIBE (effect of dilations, translations, rotations and reflections using coordinates) - 2
- PROVE (informally) - 5
 - Angle relationships in parallel lines cut by a transversal
 - Sum of angles in a triangle = 180°

<ul style="list-style-type: none"> 8.G.A.5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. 		
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ol style="list-style-type: none"> Rigid Transformations Corresponding parts of polygons Relationships for congruency Proportional reasoning Non-rigid transformation Indirect measurement 	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving. 	
<p>Core Learning Activities</p> <ol style="list-style-type: none"> Geometer's Sketchpad Illuminations website NLVM website TI-73 calculators Versatiles: Proportions, Geometry 	<p>Resources</p> <p><i>Professional & Student</i></p> <p>Professional</p> <p>Students: access to computers/internet access to TI-73 calculator Versatiles</p>	
<p><u>Assessments (Titles)</u></p> <p>Student Reflection Summative: Written Report Students will complete a Pre and Post Unit reflection with evaluation of performance. Students will compare their self-evaluation with teacher comments,</p> <p>Common Formative Assessment Formative: Standardized Test Students will take a series of mastery quizzes during the course of the unit to track student understanding and growth.</p> <p>Quarter Test Summative: Written Test Students will complete a common quarter test covering all of the standards taught during that marking period.</p> <p>Indirect Measurement WebQuest Summative: Technology Project Students will complete an indirect measurement webquest during which they demonstrate their ability to indirectly measure varying objects and distances using similarity.</p>	<p>Graduation Standards</p> <p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<p>Interdisciplinary Connections</p> <ol style="list-style-type: none"> Reason abstractly and quantitatively Use appropriate tools strategically Attend to precision Look for and express regularity in repeated reasoning. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks Analyze, evaluate and use information



Inferences about Populations



Math Grade 7 Accelerated Grade 7 | Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 2:54PM

Unit: Inferences about Populations (Week 32, 3 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population.
2. Understand that random sampling tends to produce representative samples and support valid inferences.
3. The way data is collected, organized and displayed influences interpretation

Essential Question(s)

1. How do I interpret data for a specific population and draw conclusions?
2. What inferences can I make from sample data?
3. How do you know which type of graph to use when displaying data?

Guiding Questions

Factual, Conceptual, Provocative

1. When is a bar graph used to display data?
2. When is a line graph used to display data?
3. When is a double dot plot used to display data?
4. When is a double box plot used to display data?
5. What is the benefit of looking at only a sample of the population?
6. When is a sample valid?
7. Why is random sampling effective?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Statistics & Probability

7.SP.A. Use random sampling to draw inferences about a population.

- 7.SP.A.1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- 7.SP.A.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

7.SP.B. Draw informal comparative inferences about two populations.

- 7.SP.B.3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Understand and Use Statistics - 2
- Examine a Sample of the Population - 2,3
- Generalize information about a population - 4,5
- Determine if a sample is representative/valid - 3,4
- Use measures of center and measures of variability for numerical data from random samples - 4,5
- Draw informal comparative inferences
- Use data from a random sample
- Draw inferences about a population - 4,5
- Generate multiple samples of the same size - 3
- Gauge the variation in estimates or predictions
- Express and Calculate the difference between the centers of two numerical data distributions as a multiple of a measure of variability – mean absolute deviation - 3

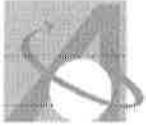
<p>between the centers by expressing it as a multiple of a measure of variability.</p> <ul style="list-style-type: none"> • 7.SP.B.4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. 	
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> • Make Predictions Using Ratios • Make Predictions Using Equations • Biased and Unbiased Samples • Use Multiple Data Samples • Use Sampling to Predict • Use a Graph • Collect Data • Identify a Misleading Graph • Identify Misleading Statistics • Compare Two Populations • Recognize Visual Overlap • Calculate Difference in Means • Calculate Mean Absolute Deviation • Select an Appropriate Display <p>Vocabulary: Biased Sample Convenience Sample Difference in Means Double Box Plot Double Dot Plot Mean Absolute Deviation Population Sample Simple Random Sample Statistics Survey Systematic Random Sample Unbiased Sample Visual Overlap Voluntary Response Sample</p>	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> • 2. Work independently and collaboratively to solve problems and accomplish goals. • 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.
<p>Core Learning Activities</p> <p>Inquiry Lab: Multiple Samples of Data Problem-Solving Investigation: Use a Graph Inquiry Lab: Collect Data Inquiry Lab: Visual Overlap of Data Distributions Market Research Performance Assessment</p>	<p>Resources</p> <p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Study Skill: Writing Math - Graph paper - Graphic Organizer-Biased and Unbiased Samples - Rate Yourself - Reflect On Essential Question - Quick check</p>

<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
<p>Unit 6 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments</p> <p>Exit Tickets available on teacher-share Formative: Other written assessments</p> <p>Unit 6 Assessment Summative: Written Test</p> <p>Market Research performance task Summative: Group Project</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Volume



Unit: Volume (Week 35, 3 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. The knowledge of the formulas for the volumes of cones, cylinders and spheres can be used to solve real-world and mathematical problems.

Essential Question(s)

1. How can the volume of 3-D objects be used to solve real world problems?
2. Is the exact answer or the estimated answer more beneficial in the real world?
3. Why are formulas important in math and science?

Guiding Questions

Factual, Conceptual, Provocative

1. How are some 3-D figures related to circles?
2. How does multiplying the dimensions of a 3-D figure by a scale factor affect its volume?
3. How does the knowledge of a solid assist in finding the volume of a composite or portion of a solid?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Geometry
8.G.C. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

- 8.G.C.9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Know the formulas for the volumes of cones, cylinders, and spheres - 2 **8.G.9**
- Apply the formulas for volumes of cones, cylinders, and spheres to solve real-world and mathematical problems. - 3
- Solve volume problems in context. - 3

Content/Topics

Critical content that students must KNOW

1. Identify 3-D figures from their attributes
2. Use the formula for the volume of the 3-D figure (cones, cylinders, and spheres)

Skills

Transferable skills that students must be able to DO

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

Core Learning Activities

- Web Quest
- TI-73 calculators
- Versatiles:

Resources

Professional & Student

Professional:

Text: Prentice Hall Math Course 3
 Ancillaries provided by publisher
 Math Department staff generated materials
 Math Department reference books
 Internet resources

Students: access to computers/internet
 www.phschool.com
 www.drmath.com
 www.purplemath.com
 www.kahnacademy.org

Illuminations
 National Council of Virtual Manipulative

Text: Prentice Hall Math Course 3
 access to TI-73 calculator
 Versatiles

<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
<p>Packing Predicament Summative: Group Project Students will complete a performance to pack the trunk of a car for a vacation using various volume formulas.</p> <p>Unit Test Summative: Written Test</p> <p>Quarter Test Summative: Standardized Test</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Probability

Collaboration **Math Grade 7 Accelerated** Grade 7 | Mathematics | Newtown Middle School | 2014-2015

Wednesday, November 12, 2014, 2:55PM



Unit: Probability (Week 38, 3 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Understand probability measures the likelihood of an event to occur.
2. Understand probability helps to analyze the risk in a situation and make informed decisions.
3. Understand probability is used to make inferences and predictions about a situation.

Essential Question(s)

1. How can you find the number of outcomes of more than one event?
2. How can you predict the outcome of future events?
3. How can you determine the likelihood of an event?
4. How do independent and dependent events differ?
5. What is the difference between theoretical and experimental probability?

Guiding Questions

Factual, Conceptual, Provocative

1. How can you use theoretical probability to predict the outcome of future events?
2. How can you use experimental probability to predict the outcome of future events?
3. How can you use sample space to predict the outcome of future events?
4. How can you use simulation to predict the outcome of future events?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 7, Statistics & Probability

7.SP.C. Investigate chance processes and develop, use, and evaluate probability models.

- 7.SP.C.5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
- 7.SP.C.6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
- 7.SP.C.7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
- 7.SP.C.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
- 7.SP.C.7b. Develop a probability model (which may

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Develop and use
 - a uniform probability model – 3,6
 - a probability model which may not be uniform – 3,6
- Find
 - probabilities of simple events - 3
 - probability of compound events using organized lists, tables, tree diagrams and simulation - 3
 - frequencies for compound events - 3
- Compare probabilities from a model to observed frequencies - 2
- Explain possible sources of the discrepancy - 5
- Observe frequencies in data - 1
- Understand - 2
 - probability of a chance event is a number between 0 and 1
 - probability of a compound event is the fraction of outcomes in the sample space
- Predict approximate relative frequency - 5

<p>not be uniform) by observing frequencies in data generated from a chance process.</p> <ul style="list-style-type: none"> • 7.SP.C.8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. • 7.SP.C.8a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. • 7.SP.C.8b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. • 7.SP.C.8c. Design and use a simulation to generate frequencies for compound events. 	
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ul style="list-style-type: none"> • Determine Probability of Simple Events • Find and use Relative Frequency • Experimental and Theoretical Probability • Predict Future Events • Determine Probability of Compound Events • Find a Sample Space • Find Probability • Simulations • Model Equally Likely Outcomes • Model Unequally Likely Outcomes • Fundamental Counting Principle • Permutations • Probability of Independent Events • Probability of Dependent Events <p>Vocabulary: Complementary Events Compound Events Dependent Events Chance Events (old-Experimental Probability) Fair Fundamental Counting Principle Independent Events Outcome Permutation Probability Random Relative Frequency Sample Space Simple Event Simulation Theoretical Probability Tree Diagram Uniform Probability Model Unfair</p>	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> • 2. Work independently and collaboratively to solve problems and accomplish goals. • 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.
<p>Core Learning Activities</p>	<p>Resources</p>

<p>Inquiry Lab: Relative Frequency Problem-Solving Investigation: Act it Out Inquiry Lab: Fair and Unfair Games Inquiry Lab: Simulate Compound Events Inquiry Lab: Independent and Dependent Events Career in Medicine</p>	<p><i>Professional & Student</i> Professional Teacher-share Textbook – Prentice Hall Mathematics Course 2 and 3 PLC Students Textbook – Prentice Hall Mathematics Course 2 and 3 Online textbook Glencoe Math-Course 2: Volume 2 - Graphic Organizer-Outcomes - Foldable – Probability Example/Picture - Rate Yourself - Reflect On Essential Question - Quick check - Foldable</p>
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<u>Assessments (Titles)</u>	Graduation Standards	Interdisciplinary Connections
<p>Unit 7 Student Self-Reflection Form re: essential and guiding questions Summative: Other written assessments</p> <p>Exit Tickets available on teacher-share Formative: Other written assessments</p> <p>Unit 7 Assessment Summative: Written Test</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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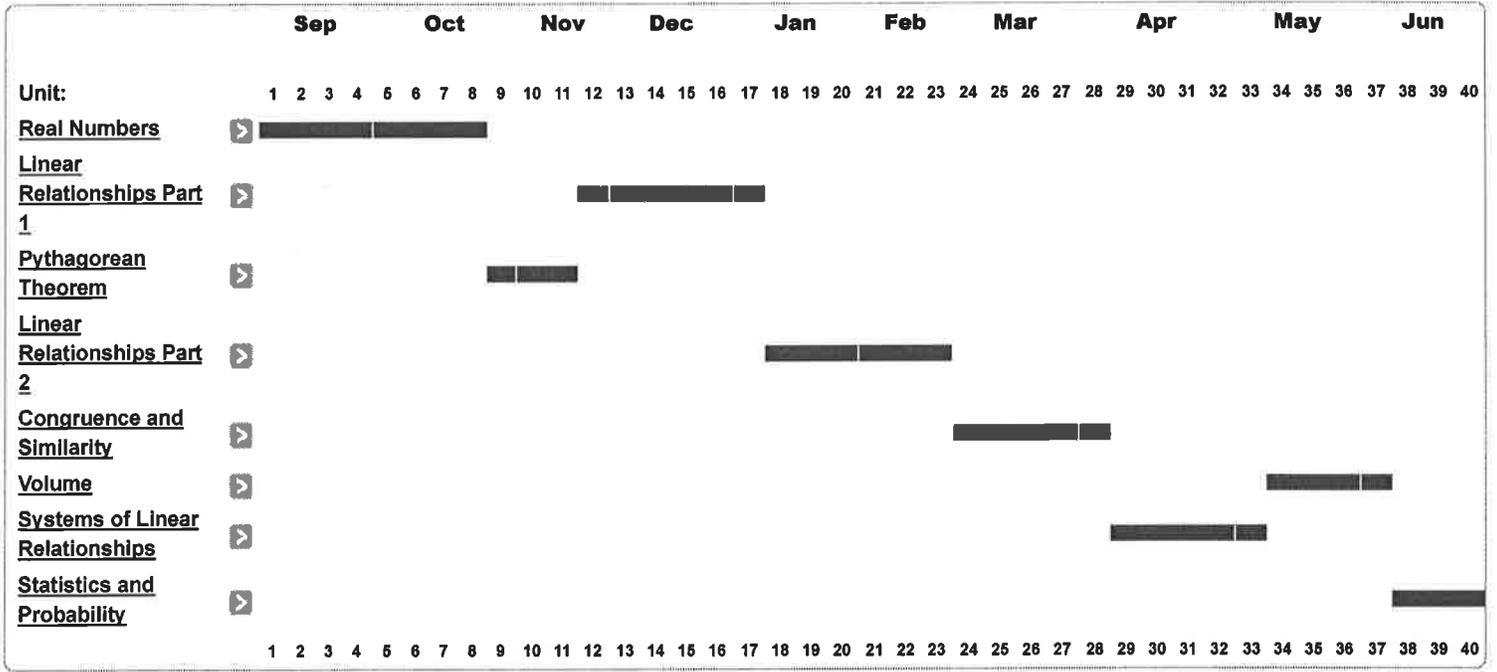




Newtown Public Schools
Course Assignments > Math Grade 8



Collaboration | **Grade 8** | **Mathematics** | Newtown Middle School



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Real Numbers



Math Grade 8 | Grade 8 | Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 3:05PM

Unit: Real Numbers (Week 1, 8 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Operations create relationships among numbers.
2. Acknowledge the reasonableness of a quantitative outcome from using good number sense and estimation strategies.

Essential Question(s)

1. What is the difference between rational and irrational numbers?
2. What makes estimation reasonable?
3. Where would you find the very big and very small numbers?
4. How would you most efficiently use very big and very small numbers?
5. When is it acceptable to approximate versus being exact?

Guiding Questions

Factual, Conceptual, Provocative

1. This number is an example of which type of number?
2. Which type of number converts to a fraction or a decimal?
3. What is a perfect square/perfect cube?
4. What is a good process to find a reasonable approximation of an irrational number?
5. How do we apply the properties of integers to exponents?
6. How do we apply Scientific Notation in the Real World?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, The Number System

8.NS.A. Know that there are numbers that are not rational, and approximate them by rational numbers.

- 8.NS.A.1. Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers are called irrational.
- 8.NS.A.2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions

CCSS: Mathematics, CCSS: Grade 8, Expressions & Equations

8.EE.A. Work with radicals and integer exponents.

- 8.EE.A.1. Know and apply the properties of integer exponents to generate equivalent numerical expressions.
- 8.EE.A.2. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

KNOW (rational and irrational numbers) - 2

UNDERSTAND (decimal expansion) -2

SHOW (decimal expansion repeats) -2

CONVERT (repeating decimal expansion to a rational number) -3

USE: **integer power of 10**

ESTIMATE (large or small quantities) - 3

EXPRESS (magnitude of numbers using powers of 10) - 2

rational approximations or irrational numbers

COMPARE (sizes or rational numbers) - 1

LOCATE (rational numbers approximately on the number line) - 2

ESTIMATE (value of expressions) - 2

Square root and cube root symbols

REPRESENT (solutions to equations) - 2

EVALUATE (square roots of perfect squares and cubed roots of

perfect cubes) - 1,3

Scientific Notation

REPRESENT (very large and very small numbers) - 2

CHOOSE (units of appropriate size) - 3

KNOW/APPLY (properties of integer exponents) - 3

GENERATE (equivalent numerical expressions) - 3

<p>and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.</p> <ul style="list-style-type: none"> 8.EE.A.3. Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. 8.EE.A.4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. 	<p>CALCULATE/CONVERT (numbers expressed in scientific notation/decimal form) - 4 INTERPRET (scientific notation generated by technology) - 3</p>
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<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ol style="list-style-type: none"> Conversion of terminating and repeating decimals to fractions Identify irrational numbers Identify perfect squares/cubes State the square/cubed root for perfect squares/cubes Approximate square/cubed roots Powers ($x/+$ rules, power to a power, fractional, zero and negative exponents) Scientific Notation (convert and compare, products and quotients) 	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> 2. Work independently and collaboratively to solve problems and accomplish goals. 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.
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<p>Core Learning Activities</p> <ol style="list-style-type: none"> Web Quest TI-73 calculators Versatiles: Real Numbers , Expressions & Equations 	<p>Resources</p> <p><i>Professional & Student</i> Professional Students: access to computers/internet access to TI-73 calculator Versatiles</p>
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<p><u>Assessments (Titles)</u></p> <p>Quarter 1 Test Summative: Written Test A test of all of the material for quarter 1, given by every grade 8 math teacher.</p> <p>Common Formative Assessment Formative: Written Test One of 6 Common Formative Assessments given during the unit to track student growth for each standard.</p> <p>Student Reflection Summative: Written Report Students will complete a pre and post written reflection on the topics covered</p>	<p>Graduation Standards</p> <p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<p>Interdisciplinary Connections</p> <ol style="list-style-type: none"> Reason abstractly and quantitatively Use appropriate tools strategically Attend to precision Look for and express regularity in repeated reasoning. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks Analyze, evaluate and use information responsibly to create
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in the unit. Students will evaluate their individual performance and compare it to the evaluation by the instructor.

Exponent Web Quest

Summative: Technology Project

Students will complete a webquest on the use of exponents in the real world.

a solution and/or a product
7. Evaluate both the process and the product

[<< Previous Year](#)

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Linear Relationships Part 1

Collaboration Math Grade 8 Grade 8 Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014, 3:07PM

Unit: Linear Relationships Part 1 (Week 12, 6 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Mathematical models can be used to clarify real-world relationships.
2. Real world situations can be represented symbolically and graphically.
3. Algebraic expressions and equations generalize relationships from specific cases.

Essential Question(s)

1. How can algebraic expressions help solve real world problems?
2. How can mathematical models be used to describe real-world situations?
3. How can algebraic expressions and equations be used to show relationships?

Guiding Questions

Factual, Conceptual, Provocative

1. What does a variable represent in an equation?
2. How do we use inverse operations to solve algebraic equations?
3. How can we use the number properties to simplify an equation?
4. What types of solutions can equations have?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Expressions & Equations

8.EE.C. Analyze and solve linear equations and pairs of simultaneous linear equations.

- 8.EE.C.7. Solve linear equations in one variable.
- 8.EE.C.7a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).
- 8.EE.C.7b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- SOLVE (linear equations) - 3
- Transform (equations) - 3
- EXPAND (expressions) - 3
 - Use the distributive property
 - Collect (like terms)

Content/Topics

Critical content that students must KNOW

1. algebraic method to solve two-step equations with rational coefficient
2. combining similar terms
3. simplify the distributive property
4. method to solve equations with variable on

Skills

Transferable skills that students must be able to DO

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem

<p>both sides of the equal sign</p> <p>5. 3 possible cases for the solution to an equation ($x=a$, $a=a$, or $a=b$ results)</p>	<p>solving.</p>	
<p>Core Learning Activities</p> <p>Manipulatives: (Algebra Tiles, Equation Balance) VersaTiles: Algebraic Expressions & Equations, Algebra 1 & Linear Functions</p>	<p>Resources</p> <p><i>Professional & Student</i></p> <p>Professional: Text: <u>Prentice Hall Math Course 3</u> Ancillaries provided by publisher Math Department staff generated materials Math Department reference books Internet resources Students: access to computers/internet www.phschool.com www.drmath.com www.purplemath.com www.kahnacademy.org Text: <u>Prentice Hall Math Course 3</u> Access to TI-73 calculator VersaTiles Algebra Tiles</p>	
<p><u>Assessments (Titles)</u></p> <p>Quarter Test Summative: Standardized Test Students are given a grade level standardized quarter test at the end of each quarter. Questions from our beginning of the year diagnostic are repeated to show student growth.</p> <p>Student Written Reflection Summative: Written Report Students prepared a written reflection based on their new understanding after instruction in the unit.</p> <p>Unit Test Summative: Written Test</p> <p>Common Formative Assessment Formative: Written Test Students take a CF to assess where they are in the equation unit.</p>	<p>Graduation Standards</p> <p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<p>Interdisciplinary Connections</p> <ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Pythagorean Theorem

Collaboration Math Grade 8 Grade 8 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 3:07PM

Unit: Pythagorean Theorem (Week 9, 3 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Pythagorean Theorem is one of the most important relationships in all mathematics.
2. Applying Pythagorean Theorem helps you solve interesting problems with distance and length.

Essential Question(s)

1. Where in the real-world can you apply Pythagorean Theorem
2. What is the meaning of Pythagorean Theorem?
3. How are real numbers and the Pythagorean Theorem used in every day life?
4. What is the relationship of Pythagorean Theorem and slope
5. Where does Pythagorean Theorem apply in a 3-D figure?

Guiding Questions

Factual, Conceptual, Provocative

1. Will the Pythagorean Theorem work for triangles that are not right triangles?
2. How can you use any two sides of a right triangle to find the third side?
3. How can you use the Pythagorean Theorem to find the length of any line segment on a coordinate plane that is not vertical or horizontal?
4. How can you use Pythagorean Theorem to determine the diagonal of a 3-D figure?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Geometry

8.G.B. Understand and apply the Pythagorean Theorem.

- 8.G.B.6. Explain a proof of the Pythagorean Theorem and its converse.
- 8.G.B.7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
- 8.G.B.8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

1. Explain a proof of the Pythagorean Theorem and its converse. -4
2. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. - 3
3. Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane - 3

Content/Topics

Critical content that students must KNOW

1. Explain a proof of Pythagorean Theorem and its converse.
2. Find missing side in a right triangle (leg and Hypotenuse).
3. Find the distance between 2 points using Pythagorean Theorem.
4. Find the length of the diagonal of a 3-D Figure
5. Find the slant height of a cone and pyramid using

Skills

Transferable skills that students must be able to DO

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

the Pythagorean theorem.		
Core Learning Activities TI-73 calculators Pythagorean Project VersaTiles: Algebra 1 & Expressions & Equations		Resources <i>Professional & Student</i> Professional: Text: <u>Prentice Hall Math Course 3</u> Ancillaries provided by publisher Math Department staff generated materials Math Department reference books Internet resources Students: access to computers/internet www.phschool.com www.drmath.com www.purplemath.com www.kahnacademy.org Text: <u>Prentice Hall Math Course 3</u> Access to TI-73 calculator VersaTiles
<u>Assessments (Titles)</u> Quarterly Assessment Summative: Written Test Students will take a grade level assessment at the end of each marking period covering all of the topics learned in class. Common Formative Assessments (4) Formative: Written Test Students will take 4 common formative assessments to measure mastery of the different topics within the unit. 1. Find missing side of a right triangle 2. Distance between 2 points 3. Proving right triangles 4. Application of Pythagorean Theorem KWL Chart Formative: Written Report Students will complete a KWL chart at the beginning of the unit to demonstrate pre-knowledge of the concepts being taught. Student Reflection Summative: Written Report Students will provide a self evaluation report analyzing their growth from pre-assessment to end of unit assessment. Students will compare their analysis to that of the teacher.	Graduation Standards <u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u>	Interdisciplinary Connections 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product



Linear Relationships Part 2

Collaboration Math Grade 8 Grade 8 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 3:08PM

Unit: Linear Relationships Part 2 (Week 18, 6 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Data can be expressed in varying formats.
2. Functions are used to map data in a very particular way.

Essential Question(s)

1. In what forms can functions be represented?
2. How do you manipulate data? (graphically, algebraically, numerically, and verbally)
3. Is the y-intercept always a relevant value?
4. What connections can we make between proportional relationships, line, and linear equations?

Guiding Questions

Factual, Conceptual, Provocative

1. What is a function?
2. Are all functions linear?
3. What are the different ways to display data?
4. What is the difference between an independent and a dependent variable?
5. What is meant by the y-intercept? (graphically and verbally)
6. How do you correctly label a graph?
7. How does slope relate to unit rate?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Expressions & Equations

8.EE.B. Understand the connections between proportional relationships, lines, and linear equations.

- 8.EE.B.5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.
- 8.EE.B.6. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .

CCSS: Mathematics, CCSS: Grade 8, Functions

8.F.A. Define, evaluate, and compare functions.

- 8.F.A.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
- 8.F.A.3. Interpret the equation $y = mx + b$ as

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- GRAPH (proportional relationships) - 4
- INTERPRET (unit rate as slope) - 2
- COMPARE (proportional relationships) - 2
- EXPLAIN (why slope is the same between any two points on a non-vertical line using similar triangles) - 3
- DERIVE (linear equations $y=mx$ and $y=mx+b$) - 3
- UNDERSTAND (function is a rule) - 2
- GRAPH (sets of ordered pairs)
- COMPARE (functions) - 3
 - Algebraically
 - Graphically
 - Numerically in tables
 - Verbal descriptions
- CONSTRUCT (function) - 3
- DETERMINE (rate of change and initial value of a function)
- READ (table or graph)
- GIVE (examples of non-linear functions) - 2
- DESCRIBE (functional relationship between two quantities) - 2
- DRAW (graph from a verbal description) - 3

defining a linear function, whose graph is a straight line; give examples of functions that are not linear.

8.F.B. Use functions to model relationships between quantities.

- 8.F.B.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
- 8.F.B.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

Content/Topics

*Critical content that students must **KNOW***

- Understand connections between proportional relationships, line and linear equations
- Distinguish between a function vs. relation
- Graph functions (from table, equation, or verbally)
- Find rate of change (table, graph, equation, 2 plotted points)
- Find the y-intercept (table, graph, equation, verbally)
- Identify non-linear functions
- State functional relationships

Skills

*Transferable skills that students must be able to **DO***

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

Core Learning Activities

- Project: "Stressed Out"
- TI-73 calculators
- VersaTiles: Algebra 1 & Linear Functions, Algebra 1 & Functions, Algebra 1 & Polynomials and Non-Linear Functions

Resources

Professional & Student

Professional:
 Text: Prentice Hall Math Course 3
 Ancillaries provided by publisher
 Math Department staff generated materials
 Math Department reference books
 Internet resources

Students: access to computers/internet
www.phschool.com
www.drmath.com
www.purplemath.com
www.kahnacademy.org
 Text: Prentice Hall Math Course 3
 Access to TI-73 calculator
 VersaTiles

Assessments (Titles)

Unit Test

Graduation Standards

Information Literacy
Problem Solving

Interdisciplinary Connections

- Reason abstractly and

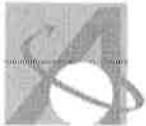
<p>Summative: Written Test</p> <p>Quarter test</p> <p>Summative: Standardized Test</p> <p>Linear Graph performance task</p> <p>Summative: Personal Project</p> <p>Students develop a graph for a linear relationship of their choice.</p>	<p><u>Spoken Communication</u></p> <p><u>Written Performance</u></p>	<p>quantitatively</p> <ol style="list-style-type: none"> 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product
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Congruence and Similarity

Collaboration Math Grade 8 | Grade 8 | Mathematics | Newtown Middle School | 2014-2015



Wednesday, November 12, 2014. 3:08PM

Unit: Congruence and Similarity (Week 24, 5 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Reflections, translations, and rotations are actions produce congruent geometric figures in the world around us
2. Real-world objects can be measured indirectly using properties of similarity.
3. Patterns can help us draw conclusions
4. Rigid and non-rigid transformations play an important role in congruency and similarity.

Essential Question(s)

1. How can you determine congruency and similarity?
2. What are the similarities and differences between congruency and similarity of polygons?
3. How is a dilation always similar to an pre-image?
4. How do you use indirect measurement to find unknown lengths?
5. How are scale drawings and models used in everyday life?

Guiding Questions

Factual, Conceptual, Provocative

1. How do we apply the properties of triangles to prove congruency?
2. What are corresponding parts?
3. Are there any properties that will not prove congruency but will prove similarity?
4. How are proportions and similarity used in the real world

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Geometry

8.G.A. Understand congruence and similarity using physical models, transparencies, or geometry software.

- 8.G.A.1. Verify experimentally the properties of rotations, reflections, and translations:
 - 8.G.A.1a. Lines are taken to lines, and line segments to line segments of the same length.
 - 8.G.A.1b. Angles are taken to angles of the same measure.
 - 8.G.A.1c. Parallel lines are taken to parallel lines.
- 8.G.A.2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
- 8.G.A.3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
- 8.G.A.4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
- 8.G.A.5. Use informal arguments to establish facts

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- VERIFY (Experimentally properties of) - 2
 - Rotations
 - Reflections
 - Translations
 - Dilations
- UNDERSTAND (Congruency) - 2,3
- DESCRIBE (Sequence of rotations, reflections, translations) - 2,3
- UNDERSTAND (Similarity) - 2,3
- DESCRIBE (Sequence of rotations, reflections, translations, dilations) - 2
- DESCRIBE (effect of dilations, translations, rotations and reflections using coordinates) - 2
- PROVE (informally) - 5
 - Angle relationships in parallel lines cut by a transversal
 - Sum of angles in a triangle = 180°

<p>about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.</p>		
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ol style="list-style-type: none"> 1. Rigid Transformations 2. Corresponding parts of polygons 3. Relationships for congruency 4. Proportional reasoning 5. Non-rigid transformation 6. Indirect measurement 	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> • 2. Work independently and collaboratively to solve problems and accomplish goals. • 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving. 	
<p>Core Learning Activities</p> <ol style="list-style-type: none"> 1. Geometer's Sketchpad 2. Illuminations website 3. NLVM website 4. TI-73 calculators 5. Versatiles: Proportions, Geometry 	<p>Resources</p> <p><i>Professional & Student</i></p> <p>Professional</p> <p>Students: access to computers/internet access to TI-73 calculator Versatiles</p>	
<p>Assessments (Titles)</p> <p>Student Reflection Summative: Written Report Students will complete a Pre and Post Unit reflection with evaluation of performance. Students will compare their self-evaluation with teacher comments.</p> <p>Common Formative Assessment Formative: Standardized Test Students will take a series of mastery quizzes during the course of the unit to track student understanding and growth.</p> <p>Quarter Test Summative: Written Test Students will complete a common quarter test covering all of the standards taught during that marking period.</p> <p>Indirect Measurement WebQuest Summative: Technology Project Students will complete an indirect measurement webquest during which they demonstrate their ability to indirectly measure varying objects and distances using similarity.</p>	<p>Graduation Standards</p> <p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<p>Interdisciplinary Connections</p> <ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information



Unit: Volume (Week 34, 4 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. The knowledge of the formulas for the volumes of cones, cylinders and spheres can be used to solve real-world and mathematical problems.

Essential Question(s)

1. How can the volume of 3-D objects be used to solve real world problems?
2. Is the exact answer or the estimated answer more beneficial in the real world?
3. Why are formulas important in math and science?

Guiding Questions

Factual, Conceptual, Provocative

1. How are some 3-D figures related to circles?
2. How does multiplying the dimensions of a 3-D figure by a scale factor affect its volume?
3. How does the knowledge of a solid assist in finding the volume of a composite or portion of a solid?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Geometry 8.G.C. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

- 8.G.C.9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- Know the formulas for the volumes of cones, cylinders, and spheres - 2 **8.G.9**
- Apply the formulas for volumes of cones, cylinders, and spheres to solve real-world and mathematical problems. - 3
- Solve volume problems in context. - 3

Content/Topics

Critical content that students must **KNOW**

1. Identify 3-D figures from their attributes
2. Use the formula for the volume of the 3-D figure (cones, cylinders, and spheres)

Skills

Transferable skills that students must be able to **DO**

- 2. Work independently and collaboratively to solve problems and accomplish goals.
- 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.

Core Learning Activities

- Web Quest
- TI-73 calculators
- Versatiles:

Resources

Professional & Student

Professional:

Text: Prentice Hall Math Course 3

Ancillaries provided by publisher

Math Department staff generated materials

Math Department reference books

Internet resources

Students: access to computers/internet
 www.phschool.com
 www.drmath.com
 www.purplemath.com
 www.kahnacademy.org

Illuminations
 National Council of Virtual Manipulative

Text: Prentice Hall Math Course 3
 access to TI-73 calculator
 Versatiles

<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
<p>Packing Predicament Summative: Group Project Students will complete a performance to pack the trunk of a car for a vacation using various volume formulas.</p> <p>Unit Test Summative: Written Test</p> <p>Quarter Test Summative: Standardized Test</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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Systems of Linear Relationships

Collaboration Math Grade 8 Grade 8 Mathematics Newtown Middle School 2014-2015



Wednesday, November 12, 2014, 3:09PM

Unit: Systems of Linear Relationships (Week 29, 5 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. Systems of equations are a valuable tool used in mathematical modeling of the world around us

Essential Question(s)

1. What is the meaning of the solution to systems of linear relationship?
2. Where can you apply systems?
3. Why is comparing functions useful?

Guiding Questions

Factual, Conceptual, Provocative

1. What does the solution to a pair of simultaneous equations represent?
2. How can you find the solution to a pair of simultaneous equations?
3. Which method is most efficient in solving a system?
4. How can you compare functions of dissimilar forms?
5. What does the solution to a simultaneous application problem represent?
6. What Real world situations can be solved using simultaneous equations?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Expressions & Equations

8.EE.C. Analyze and solve linear equations and pairs of simultaneous linear equations.

- 8.EE.C.8. Analyze and solve pairs of simultaneous linear equations.
- 8.EE.C.8a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
- 8.EE.C.8b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.

CCSS: Mathematics, CCSS: Grade 8, Functions

8.F.A. Define, evaluate, and compare functions.

- 8.F.A.2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- UNDERSTAND (Solutions) - 3
- SOLVE (systems of equations) - 3
- ESTIMATE (solutions) - 3
- GRAPH (equations) - 3
- SOLVE (Real-world problems leading to two linear equations in two variables) - 3
- COMPARE (functions represented differently) - 3

<p>function represented by an algebraic expression, determine which function has the greater rate of change.</p>		
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ol style="list-style-type: none"> 1. Solve pairs of simultaneous equations 2. Graphically (estimate solution if necessary) 3. Using substitution 4. Using elimination 5. Using technology 6. Real World applications 7. Compare properties of 2 functions represented by dissimilar forms 	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> • 2. Work independently and collaboratively to solve problems and accomplish goals. • 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving. 	
<p>Core Learning Activities</p> <p>TI-73 calculators VersaTiles: Algebra 1 & Functions, Algebra 1 & Linear Functions Initiation for Performance Assessment will be a collaboration piece for "Cell phone data Plans"</p>	<p>Resources</p> <p><i>Professional & Student</i> Professional: Text: <u>Prentice Hall Math Course 3</u> Ancillaries provided by publisher Math Department staff generated materials Math Department reference books Internet resources Students: access to computers/internet www.phschool.com www.drmath.com www.purplemath.com www.kahnacademy.org Text: <u>Prentice Hall Math Course 3</u> Access to TI-73 calculator VersaTiles</p>	
<p><u>Assessments (Titles)</u></p> <p>Unit Test Summative: Written Test</p> <p>Quarter Test Summative: Standardized Test</p> <p>Battle Ship Performance Task Summative: Personal Project Students calculate the location of pirate raids as they sail from London to New York across the Atlantic</p> <p>Carnival Planning Project Summative: Group Project Students use their knowledge of systems of equations to design and decide on pricing for a carnival</p>	<p><u>Graduation Standards</u></p> <p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<p><u>Interdisciplinary Connections</u></p> <ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product



Statistics and Probability

Collaboration
2015

Math Grade 8 | Grade 8 | Mathematics | Newtown Middle School | 2014-



Wednesday, November 12, 2014, 3:10PM

Unit: Statistics and Probability (Week 38, 3 Weeks)

Enduring Understanding(s)/ Generalization(s)

1. The way that data is collected, organized and displayed influences interpretation.
2. Patterns and relationships can be represented numerically, graphically, symbolically, and verbally.
3. Patterns provide insights into potential relationships.
4. The probability of an event's occurrence can be predicted with varying degrees of confidence.

Essential Question(s)

1. Why is data collected and analyzed?
2. How do people use data to influence others?
3. How can predictions be made based on data?
4. What is a pattern?
5. How do I describe a pattern?
6. How do I express a pattern to show a relationship?
7. How can patterns be used to make predictions?

Guiding Questions

Factual, Conceptual, Provocative

1. How are patterns used when comparing two quantities?

Standard(s)

Content and CCSS

CCSS: Mathematics, CCSS: Grade 8, Statistics & Probability

8.SP.A. Investigate patterns of association in bivariate data.

- 8.SP.A.1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
- 8.SP.A.2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
- 8.SP.A.3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.
- 8.SP.A.4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two

Objective(s)

Bloom/ Anderson Taxonomy / DOK Language

- CONSTRUCT scatter plots for bivariate measurement data - 3
- INTERPRET scatter plots for bivariate measurement data - 2
- INVESTIGATE patterns - 4
- DESCRIBE patterns - 1,2
- USE equation of a linear model - 4
- SOLVE in context - 4
- INTERPRET slope and intercept - 2
- UNDERSTAND patterns of association in data - 3
- DISPLAY frequencies and relative frequencies - 2
- DESCRIBE association between variables - 3
- DRAW line of best fit - 3

variables.	
<p>Content/Topics</p> <p><i>Critical content that students must KNOW</i></p> <ol style="list-style-type: none"> 1. Construct Scatter Plots for bivariate measurement 2. Interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities 3. Describe Patterns <ol style="list-style-type: none"> 1. Clustering 2. Outliers 3. Positive or negative correlation 4. Linear 5. Non-linear 4. Understand that patterns can be seen by displaying frequencies and relative frequencies in a two-way table 5. Construct and interpret two-way table summarizing data on two categorical variables collected from the same subjects. 6. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. 7. Use the equations of a linear model to solve problems in context of bivariate measurement data, interpreting the slope and intercept. 8. Know that a straight line is widely used to model relationships between two quantitative variables. 9. Use Line of Best Fit to assess the model fit by judging the closeness of the data points to the line. 	<p>Skills</p> <p><i>Transferable skills that students must be able to DO</i></p> <ul style="list-style-type: none"> • 2. Work independently and collaboratively to solve problems and accomplish goals. • 5. Effectively apply the analysis, syntheses, and evaluative processes that enable productive problem solving.
<p>Core Learning Activities</p> <ul style="list-style-type: none"> • Web Quest • TI-73 calculators • Versatiles: 	<p>Resources</p> <p><i>Professional & Student</i></p> <p>Professional:</p> <ul style="list-style-type: none"> Text: <u>Prentice Hall Math Course 3</u> Ancillaries provided by publisher Math Department staff generated materials Math Department reference books Internet resources <p>Students: access to computers/internet</p> <ul style="list-style-type: none"> www.phschool.com www.drmath.com www.purplemath.com www.kahnacademy.org <p>Illuminations</p> <p>National Council of Virtual Manipulative</p> <p>Text: <u>Prentice Hall Math Course 3</u></p> <ul style="list-style-type: none"> access to TI-73 calculator Versatiles

<u>Assessments (Titles)</u>	<u>Graduation Standards</u>	<u>Interdisciplinary Connections</u>
<p>Quarter Test Summative: Standardized Test</p> <p>Unit test Summative: Written Test</p> <p>Wheel of Fortune Letter Frequency Summative: Personal Project</p> <p>Could I be a Forensic Scientist? Summative: Lab Assignment Performance task to look at lines of best fit</p>	<p><u>Information Literacy</u> <u>Problem Solving</u> <u>Spoken Communication</u> <u>Written Performance</u></p>	<ol style="list-style-type: none"> 1. Reason abstractly and quantitatively 2. Use appropriate tools strategically 3. Attend to precision 4. Look for and express regularity in repeated reasoning. 5. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks 6. Analyze, evaluate and use information responsibly to create a solution and/or a product 7. Evaluate both the process and the product

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