Math6.org Activities for Algebra

Vocabulary Studies

- ___1) On-Line Word Search
- ____2) 3 Column Notes
- ____3) Flash Cards
- 4) Crossword Puzzle
- _____5) Matching Practice
- 6) Vocabulary Millionaire!

Tests and Games

- ____32) Mid Chapter Quiz
- ____33) Quiz Bowl
- ____34) Practice Test
- ____35) Algebra Millionaire

Activities by Lesson

2.1 Variables and Expressions

- ____1) Variable Worksheet
- ____2) Variables (GP)
- 3) Lesson Quiz
- 4) **Using Variable Expression

2.2 Translating Math

- _5) Translating Worksheet
- _6) Lesson Quiz
- __7) **Know It All Magic

2.3 Equations & amp; Substitution

- __8) Substitution Worksheet
- 9) Substitution (GP)
- ___10) Lesson Quiz
- ___11) **Use a Table

2.4 Addition Equations

- ____12) Addition Equations Worksheet
- __13) Equations Lesson
- ___14) Addition Equations (GP)
- ___15) Lesson Quiz
- _16) **Geometric Algebra

2.5 Subtraction Equations

- ____17) Subtraction Equations Worksheet
 - ____18) Solving Equations Lesson
 - ____19) Subtraction Equations (GP)
- ____20) Lesson Quiz
- ____21) **Money Math

2.6 <u>Multiplication Equations</u>

- ___22) Multiplication Equations Worksheet
- ___23) Equations Lesson
- ___24) Multiplication Equations (GP)
- __25) Lesson Quiz
 - _26) **More Money Math

2.7 Division Equations

- ___27) Division Equations Worksheet
- ____28) Equations Lesson
- ____29) Division Equations (GP)
- ____30) Lesson Quiz
 - __31) **Amazing Averages
 - ____ Amazing Averages (GP)
 - ____ Amazing Averages Extension

Name _____

Word List – 3 Column Notes

Word	Definition	Example
algebraic expression	A mathematical phrase that contains at least 1 variable.	7 + y
constant		
difference		
equation		
inverse operation		
phrase		
product		
quantity		
quotient		
solution		
substitute		
sum		
variable		

Math Journal - Chapter 2 - Algebra

- 2.01 Create your own algebraic expression. Make a table to show 5 possible solutions.
- 2.02 The extension @ Math6.org for this lesson is a fun magic trick. You may complete this extension or create an Error Alert poster to assist your classmates in understanding the difficulties related to subtraction expressions. Please include correct and incorrect examples for writing subtraction phrases.
- 2.03 Select your 5 favorite foods and research the number of grams of sugar in each. Create a table showing the results. Then create a second table that shows only one of the results and write an algebraic expression for each of the missing results. (see sample)

Animal Speeds				
Cheetah 70 mph				
Lion	Z + 10			
Rabbit	C/2			
Zebra	R+5			

- 2.04 Many students require a visual clue to assist in remembering to keep equations balanced during "alterations". Choose any problem from today's work. Draw a balance for each step of the solution and show how you kept the equation balanced as you found the solution.
- 2.05 Use the model in box 1 of today's guided practice or create a new flow map with examples to help you write a "how to solve subtraction equations" paragraph.
- 2.06 Today's enrichment @ Math6.org will compare, predict, and test with algebra. I would like you to complete this enrichment **or** complete worksheet 2.6ext modeling the algebra for each problem.
- 2.07 You now know how to apply all 4 of the operations to equations with variables. Create a 4x4. Select one problem for each operation and model its solution. Then on the back of the 4x4, write a paragraph or poem about the equation operation you find to be the easiest or most interesting. (you need not explain why you may write a love poem, a eulogy, sermon, newspaper article ...)

General Scoring Rubric:

- 0 No Response
- 1 Wrong response
- 2 Weak response
- 3 Showed understanding
- 4 Showed understanding and cited an example
- 5 Showed understanding, cited examples and communicated effectively enough to enable others to understand.

Math Objectives

5.01

Simplify algebraic expressions and justify the results using the basic properties of rational numbers.

- a. Identity
- b. Commutative
- c. Associative
- d. Distributive
- e. Order of operations

Essential Question

One way to alleviate boredom is to break routines. The school board has decided that they are going to break the routine of the school day by using an algebraic expression to determine the time that the school day will start. You may choose (8:00 + n minutes) or (8:00 - n minutes) where n = the number of days of school. (1, 2, 3, 4, 5...) Which formula will you choose and what are some of your reasons for choosing this answer?

Wayne County Schools 21st Century Instructional Lesson Plan Variables and Expressions

NAME: Subject: Math								
Date: Grade Level (s): 6								
Standards/Objectiv	ves .	Addressed (NCSCOS)					
5.01 Simplify algebraic e rational numbers. a Order of operations	xpr a. Io	essions and justify th dentity; b. Commuta	ne r tive	esults using t e; c. Associati	the l ve;	basic properties o d. Distributive; e	of	
Essential Question(s) (In student-friendly terms)								
Essential Question(s) (In student-friendly terms)								
One way to alleviate boredom is to break routines. The school board has decided that they are going to break the routine of the school day by using an algebraic expression to determine the time that the school day will start. You may choose ($8:00 + n$ minutes) or ($8:00 - n$ minutes) where $n =$ the number of days of school. (1, 2, 3, 4, 5) Which formula will you choose and what are some of your reasons for choosing this answer?								
Assess (Look at stude	nt da	ata to plan. Use formative	and	/or summative	asses	ssments.)		
Assess student know	Assess student knowledge of properties, estimation and mental math.							
High Yield Instruct	ona	al Strategies (check	all t	hat apply to	the	lesson)		
Identifying similarities and differences	~	Reinforcing effort and providing recognition		Nonlinguistic representation	~	Setting objectives and providing feedback	~	
Questions, cues, and advance organizers Homework and practice	✓ ✓	Summarizing and note taking	 ✓ 	Cooperative learning	✓	Generating and testing hypotheses		
Learner Diversity • How will you dif	fere	ntiate to meet the needs	of al	l learners in you	r cla	ss?		
504 modifications ET and RA. Additional student and teacher modeling, paired learning groups, and concrete representations will help to guide all students to reach expected outcomes. Differentiated assignments and practice will focus on remediation and enrichment of lower and higher ability groups.								
 Engage (Anticipatory Set) Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion. 								
Begin with changing Method. Today we	g tir will	nes/weather activity learn about variable	. R	eview variabl nd algebraic (es f expr	rom the Science ressions.		

	Instructional Practices Used in this Lesson					
ng Centers						
r-directed Questions and rs	√					
ng Mathé org						
Matrio.org						
ional Practices						
hyme/Rhythm/Rap						
ent						
Problem- Based Learning						
nics						
dividual						
Essential Question(s)? ginning to self-assess. essful?						
5 possible solutions.						
dents deepen their aviors, and/or remarks to unter? cons? What would you do						

Date:	Time Frame: 80 minutes
	Variables and Expressions
Essential Question:	One way to alleviate boredom is to break routines. The school board has decided that they are going to break the routine of the school day by using an algebraic expression to determine the time that the school day will start. You may choose (8:00 + n minutes) or (8:00 - n minutes) where n = the number of days of school. (1, 2, 3, 4, 5) Which formula will you choose and what are some of your reasons for choosing this answer?
Objective (s) Numbers: Outcomes:	 5.01 Simplify algebraic expressions and justify the results using the basic properties of rational numbers. a. Identity b. Commutative c. Associative d. Distributive e. Order of operations
Materials:	Textbook pages 48-51
Anticipatory Set:	Begin with changing times/weather activity. Review variables from the Science Method. Today we will learn about variables and algebraic expressions.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (narrative) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Introduce and teach the vocabulary. {algebraic expression, phrase, variable, constant, substitution}
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use a 4x4 to model substitution in the following algebraic expressions {4n + 5 , n = 6} {36 \div n , n = 9} {27 - n2, n = 4} {144/n , n = 6}
	After the Lesson
Independent Practice	Text page 50-50 {1–2, 5–6, 11–17 odd, 22–30} AIG: {11–19, 22–30} Assign workbook page 2.1
Closure / Assessment:	Create your own algebraic expression. Make a table to show 5 possible solutions.
Integration with School-wide Foo	cus: Improve mathematics computation and problem solving.

Related Math6.org Activities: Variables Guided Practice There are 6 activities connected with this lesson

**Using Variable Expression

Math Objectives

5.02 Use and evaluate algebraic expressions.

Essential Question

Right now, your math program contains a mixture of word problems and mathematical sentences. However, the school board has decided that they want our program to be 100% word problems or 100% mathematical sentences. Your parents will be voting on this issue and they will ask for your input. What argument will you give them to help them to choose the style that you prefer. (you may not argue to return to the mixed version that we currently employ)

Wayne County Schools 21st Century Instructional Lesson Plan Translate Between Words and Math

NAME:	NAME: Subject: Math							
Date:			Gr	ade Level (s)	: 6			
Standards/Objectiv	/es	Addressed (NCSCOS)					
5.02								
Use and evaluate algebraic expressions.								
Essential Question(s) (In student-friendly terms)								
Right now, your ma	ith I	orogram contains a r	nixt	ure of word p	brob	lems and mathen	nati	cal
sentences. Howeve	er, t	the school board has	dec	ided that the	y w	ant our program	to k	be
100% word probler	ns c	or 100% mathematic		entences. Yo	our p	varents will be vo	ting	}
bein them to choose	iey ≏th	will ask for your inputes style that you pref	or?	(you may no	nta	raue to return to	tha	
mixed version that	we	currently employ)		(you may no	Jua	rgue to return to	the	
Assess (Look at stude	nt da	ata to plan. Use formative	and	/or summative a	asse	ssments.)		
Assess student kno	wle	dge of algebraic expr	ess	ions and vari	able	es.		
High Yield Instruct	iona	al Strategies (check a	all t	hat apply to	the	lesson)		
Identifying similarities	✓	Reinforcing effort and	1	Nonlinguistic	✓	Setting objectives	✓	
and differences		providing recognition		representation		and providing		
Questions, cues, and	~	Summarizing and note	~	Cooperative	~	Generating and		
advance organizers	~	taking		learning		testing hypotheses		
Loorpor Divorcity			<u> </u>					
How will you dif	fere	ntiate to meet the needs	of al	l learners in you	r cla	ss?		
504 modifications E	Та	nd RA. Additional st	ude	nt and teache	er m	nodeling, paired		
learning groups, an	d co	oncrete representatio	ons	will help to g	uide	e all students to re	eacl	h
expected outcomes	. D	ifferentiated assignm	nent	ts and practic	e w	ill focus on remed	liat	ion
and enrichment of I	owe	er and higher ability	gro	ups.				
Engage (Anticipato	rv 9	Set)						
Capture the stue	dent	s' attention, stimulate the	eir th	inking and help	then	n access prior knowle	dge	
Consider novelt	y, m	eaning and emotion.						
Deale with Thisk (D								
Begin with Think/Pair discussion of life events when monies are paid. Today we will								
learn about translating word phrases into numeric and algebraic expressions.								

Coaching	~	Providing Directions/	~	Learning Centers	
Discussion	~	Instructions Providing opportunities for	~	Teacher-directed Questions and Answers	,
Hands-on experiences	✓	Direct Instruction	~	Modeling	-
Presentation	✓	Testing		Other: Math6.org	•
Successful busined based languin					
Fuggested brained-based learnin Think-Pair-Share		Instructional Games	ove	Music/Rhyme/Rhythm/Rap	
Thinking Maps	~	Student Facilitators		Movement	
Technology Integration	~	Storytelling		Humor	
Jse of visuals	✓	Field Trips(Virtual)		Project/Problem- Based Learning	
Metaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics	
Peer/Self Assessment	✓	Drawing or illustrating		Other:	
Nriting/Reflecting/Journals	~	Simulations/Role Play		Other: Magic	`
Explain, Explore, Elaborate Content Chunks: How will Transitions should be use Involve students in an ar Use reflective activities t Give students time to thi Give students the opport apply it to a real-world si	you alysi o clai nk, p unity ituati	divide and teach th ery 5-15 minutes to kee is of their explorations. rify and modify student of lan, investigate and orga to expand and solidify t on.	e C p th unde anizo heir	ontent? e students' brains engaged. erstanding. e collected information. r understanding of the concept and/c	or
Explain, Explore, Elaborate Content Chunks: How will Transitions should be use Involve students in an ar Use reflective activities t Give students time to thi Give students the opport apply it to a real-world si See next page for instruction Evaluate (Feedback/Closu	you ad ev alysi o clai nk, p unity ituati onal onal	divide and teach th ery 5-15 minutes to kee is of their explorations. rify and modify student to lan, investigate and orga to expand and solidify t on. detail.	e C p th unde anizo heir	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/o	or
Explain, Explore, Elaborate Content Chunks: How will Transitions should be use Involve students in an ar Use reflective activities t Give students time to thin Give students the opport apply it to a real-world si See next page for instruction Evaluate (Feedback/Closu Evaluate throughout the Present students with a s What assessment(s) will	you alysi o clain nk, p unity ituati onal re) lesso scorin be u	divide and teach th ery 5-15 minutes to kee is of their explorations. rify and modify student to lan, investigate and orga to expand and solidify to on. detail.	e C p th unde anizz heir ans c) a nts	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/o wer the Essential Question(s)? to the beginning to self-assess. are successful?	or
Explain, Explore, Elaborate Content Chunks: How will Transitions should be use Involve students in an ar Use reflective activities to Give students time to this Give students the opport apply it to a real-world si See next page for instruction Evaluate (Feedback/Closu Evaluate throughout the Present students with a s What assessment(s) will The extension @ Math6.org	you ad ev alysi o clai nk, p unity ituati onal re) lesso scorii <u>be u</u> g for	divide and teach thery 5-15 minutes to keep is of their explorations. rify and modify student of lan, investigate and orgate to expand and solidify to on. detail. detail.	ans ans ic) a ma	ontent? e students' brains engaged. erstanding. e collected information. r understanding of the concept and/o wer the Essential Question(s)? ht the beginning to self-assess. are successful? agic trick. You may complete	or thi
Explain, Explore, Elaborate Content Chunks: How will Transitions should be use Involve students in an ar Use reflective activities t Give students time to thi Give students the opport apply it to a real-world si See next page for instruction Evaluate (Feedback/Closu Evaluate throughout the Present students with a s What assessment(s) will The extension @ Math6.org extension or create an Error	you ad ev alysi o clai nk, p unity ituati onal re) lesso scoriu be u g for or Al	divide and teach thery 5-15 minutes to keep is of their explorations. rify and modify student of lan, investigate and orgation to expand and solidify to on. detail.	ans ans ic) a ma	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/c wer the Essential Question(s)? it the beginning to self-assess. are successful? agic trick. You may complete ur classmates in understanding	or thi
Explain, Explore, Elaborate Content Chunks: How will Transitions should be use Involve students in an ar Use reflective activities t Give students time to thi Give students the opport apply it to a real-world si See next page for instruction Evaluate (Feedback/Closu Evaluate throughout the Present students with a s What assessment(s) will The extension @ Math6.org extension or create an Error the difficulties related to su	you ad ev alysi o clain nk, p unity ituati onal onal re) lesso scorin be u g for or Al ubtra	divide and teach thery 5-15 minutes to keep is of their explorations. rify and modify student of lan, investigate and orgation expand and solidify to on. detail. detail.	ans ans ic) a ma you	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/o wer the Essential Question(s)? to the beginning to self-assess. are successful? agic trick. You may complete ur classmates in understanding ease include correct and incorr	thi g
Explain, Explore, Elaborate Content Chunks: How will Transitions should be use Involve students in an ar Use reflective activities to Give students time to this Give students the opport apply it to a real-world si See next page for instruction Evaluate (Feedback/Closu Evaluate throughout the Present students with a s What assessment(s) will The extension @ Math6.org extension or create an Error the difficulties related to su examples for writing subtra	re) lesso scoriu be u g for or Al ubtra	divide and teach thery 5-15 minutes to keep is of their explorations. rify and modify student of lan, investigate and orgation to expand and solidify to on. detail. detail.	ans ans ic) a ma you Ple	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/c • understanding to self-assess. are successful? agic trick. You may complete ur classmates in understanding ease include correct and incorr	thi g

Date:	Time Frame: 80 minutes
	Translate Between Words and Math
Essential Question:	Right now, your math program contains a mixture of word problems and mathematical sentences. However, the school board has decided that they want our program to be 100% word problems or 100% mathematical sentences. Your parents will be voting on this issue and they will ask for your input. What argument will you give them to help them to choose the style that you prefer? (you may not argue to return to the mixed version that we currently employ)
Objective (s) Numbers: Outcomes:	5.02 Use and evaluate algebraic expressions.
Materials:	Textbook pages 52-56; Reteaching 2.2
Anticipatory Set:	Begin with Think/Pair discussion of life events when monies are paid. Today we will learn about translating word phrases into numeric and algebraic expressions.
Presentation of Information: Integration of Other Subjects:	Writing (to instruct/inform) Reading (vocabulary, problem solving, analyzing expectation)
Integration of Reading: Integration of Technology:	Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	When solving word problems, we often need to write an equation. To do so, you must know what operations are needed. Learning about the key words for translating will help us with this skill.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use Reteaching 2.2 to guide the students through this skill. Pay special attention to the process of subtraction and help the students to understand that substitution works when they feel confused.
	After the Lesson
Independent Practice	Text page 54-55 {1-3, 8-13, 30-31, 36-42} AIG: {10-15, 30-42} Assign workbook page 2.2
Closure / Assessment:	The extension @ Math6.org for this lesson is a fun magic trick. You may complete this extension or create an Error Alert poster to assist your classmates in understanding the difficulties related to subtraction expressions. Please include correct and incorrect examples for writing subtraction phrases.
Integration with School-wide Foc	us: Improve mathematics computation and problem solving.

Related Math6.org Activities: There are 5 activities connected with this lesson Translating Worksheet **Know It All Magic

Reteach

2-2 Translate Between Words and Math

There are key words that tell you which operations to use for mathematical expressions.

Addition	Subtraction	Multiplication	Division
(combine)	(less)	(put together groups of equal parts)	(separate into equal groups)
add	minus	product	quotient
plus	difference	times	divide
sum	subtract	multiply	
total	less than		
increased by	decreased by		
more than	take away		

You can use key words to help you translate between word phrases and mathematical phrases.

A. 3 plus 5	B. 3 times <i>x</i>	C. 5 less than <i>p</i>	D. <i>h</i> divided by 6
3 + 5	3 <i>x</i>	р — 5	h ÷ 6

Write each phrase as a numerical or algebraic expression.

1. 4 less than 8	2. <i>q</i> divided by 3	3. <i>f</i> minus 6	4. d multiplied by 9
You can use key we phrases.	ords to write word phra	ases for mathematical	
A. 7 <i>k</i>		B. 5 – 2	
the product of 7	and k	• 5 minus 2	
• 7 times <i>k</i>		• 2 less than 5	
Write a phrase for	each expression.		
5. <i>z</i> ÷ 4	6. 5 • 6	7. <i>m</i> – 6	8. <i>s</i> + 3

Name

___ Date _____ Class _____

CHAPTER Quiz

Choose the best answer.

- Evaluate 2x for x = 7.
 A 5
 B 7
 C 9
 D 14
- 2. Evaluate \$\frac{x}{3}\$ for \$x = 27\$.
 A 3
 B 9
 D 81
- 3. Evaluate 2y 4 for y = 9.
 A 9
 B 14
 D 25

Which expression matches the phrase?

4. 32 less than *y*

A 32 + <i>y</i>	C 32 - y
B <i>y</i> + 32	D y – 32

5. 35 divided by w**A** $\frac{35}{w}$

A $\frac{35}{w}$ **C** $\frac{w}{35}$ **B** 35w **D** 35 + w

- **6.** Which phrase matches 15 + h?
 - A fifteen less than h
 - **B** fifteen times *h*
 - C fifteen plus h
 - **D** the quotient of fifteen and h

Name _

_____ Date _____ Class _____

CHAPTER Quiz			
2 Section	on A		
Choose the be	st answer.	Which expressio	n matches the
1. Evaluate 2 <i>x</i>	for $x = 7$.	phrase?	
A 5	C 9	4. 32 less than y	,
B 7	D 14	A 32 + <i>y</i>	C 32 - y
Y	<u> </u>	B <i>y</i> + 32	D <i>y</i> - 32
2. Evaluate $\frac{x}{3}$	for $x = 27$.		
A 3	C 27	5. 35 divided by	W
B 9	D 81	$\mathbf{A} \frac{35}{W}$	c $\frac{W}{35}$
3. Evaluate 2y	y - 4 for $y = 9$.	B 35 <i>w</i>	D 35 + <i>w</i>
A 9	C 15	6. Which phrase	matches 15 + h?
B 14	D 25	A fifteen less	than <i>h</i>
		B fifteen time	s h
		C fifteen plus	h
		D the quotien	t of fifteen and <i>h</i>

Math Objectives

5.03 Solve simple (one- and twostep) equations or inequalities.

Essential Question

Any letter or symbol can be used to represent a variable in a mathematical sentence. Often these letters are the first letter of the word that they represent in the sentence. However, when practicing algebraic concepts, mathematical sentences are given without a word problem (in order to allow more practice problems in less space). The variables that are most often used in these instances are x and n. Rather than mixing it up for these practice problems, it seems prudent that a single letter or symbol should be chosen as the standard mathematical variable. What 3 letters or symbols should not be used? Explain why you chose these.

Wayne County Schools 21st Century Instructional Lesson Plan Equations and Their Solutions

NAME: Subject: Math Grade Level (s): 6 Date: Standards/Objectives Addressed (NCSCOS) 5.03 Solve simple (one- and two-step) equations or inequalities. **Essential Question(s)** (In student-friendly terms) Any letter or symbol can be used to represent a variable in a mathematical sentence. Often these letters are the first letter of the word that they represent in the sentence. However, when practicing algebraic concepts, mathematical sentences are given without a word problem (in order to allow more practice problems in less space). The variables that are most often used in these instances are x and n. Rather than mixing it up for these practice problems, it seems prudent that a single letter or symbol should be chosen as the standard mathematical variable. What 3 letters or symbols should not be used? Explain why you chose these. Assess (Look at student data to plan. Use formative and/or summative assessments.) Assess student knowledge of algebraic expressions and variables. High Yield Instructional Strategies (check all that apply to the lesson) Identifying similarities Reinforcing effort and Nonlinguistic Setting objectives and differences providing recognition representation and providing feedback Summarizing and note Questions, cues, and Cooperative Generating and testing hypotheses advance organizers taking learning Homework and practice **Learner Diversitv** How will you differentiate to meet the needs of all learners in your class? 504 modifications ET and RA. Additional student and teacher modeling, paired learning groups, and concrete representations will help to guide all students to reach expected outcomes. Differentiated assignments and practice will focus on remediation and enrichment of lower and higher ability groups. Engage (Anticipatory Set) Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion. Equations are mathematical sentences that have an equals sign. The equals sign shows you that the quantities on either side are equal in value. Whatever you add or take away from one side of the equation, must be added or taken away from the other side to keep the balance. Have the students measure the mass of a chosen object using a balance. Then have the students use equations to find the mass of 3o and 120. Today we learn about equations and substitution.

Coaching					
Discussion	~	Providing Directions/	~	Learning Centers	
	~	Providing opportunities for	~	Teacher-directed Questions and Answers	~
Hands-on experiences	~	Direct Instruction	✓	Modeling	✓
Presentation	~	Testing		Other: Math6.org	√
Suggested brained-based learni Think-Pair-Share	ng act √	ivities promoting the ab Instructional Games	ove	Instructional Practices Music/Rhyme/Rhythm/Rap	
Thinking Maps	~	Student Facilitators		Movement	✓
Technology Integration	~	Storytelling		Humor	
Use of visuals	✓	Field Trips(Virtual)		Project/Problem- Based Learning	√
Metaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics	
Peer/Self Assessment	√	Drawing or illustrating		Other:	
Writing/Reflecting/Journals	~	Simulations/Role Play	~	Other:	
small groupstude	ent pa	iirs _✓_whole grou	р	_√_individual	
• Give students the oppor apply it to a real-world s See next page for instruct	tunity <u>situati</u> tional	to expand and solidify t on. detail.	their	understanding of the concept and/	or
Evaluato (Ecodback/Close					
Evaluate (Feedback/Closu • Evaluate throughout the • Present students with a • What assessment(s) will	ure) e lesso scorir Il be us	n. Are students able to ng guide (such as a rubr sed to be sure the stude	ans ic) a	wer the Essential Question(s)? It the beginning to self-assess. are successful?	
Evaluate (Feedback/Close Evaluate throughout the Present students with a What assessment(s) will Select your 5 favorite food	ure) e lesso scorir II be us ds an	n. Are students able to ng guide (such as a rubr sed to be sure the stude d research the num	ans ic) a nts	wer the Essential Question(s)? It the beginning to self-assess. are successful? Of grams Animal Speeds	
Evaluate (Feedback/Close • Evaluate throughout the • Present students with a • What assessment(s) will Select your 5 favorite food of sugar in each. Create a	ure) e lesso scorir Il be u ds an a tabl	n. Are students able to ng guide (such as a rubr sed to be sure the stude d research the num le showing the resu	ans ic) a nts iber lts.	wer the Essential Question(s)? It the beginning to self-assess. are successful? Of grams Then Animal Speeds Cheetah 70 mp	0h
Evaluate (Feedback/Closu Evaluate throughout the Present students with a What assessment(s) will Select your 5 favorite food of sugar in each. Create a create a second table that	ure) scorir <u>ll be us</u> ds an a tabl	on. Are students able to Ing guide (such as a rubr sed to be sure the stude d research the num le showing the resu ws only one of the r	ans ic) a ints iber lts. resu	wer the Essential Question(s)? It the beginning to self-assess. are successful? of grams Then Ilts and Minimal Speeds Cheetah Lion Z+1	oh D
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Date:	Time Frame: 80 minutes
	Equations and Their Solutions
Essential Question:	Any letter or symbol can be used to represent a variable in a mathematical sentence. Often these letters are the first letter of the word that they represent in the sentence. However, when practicing algebraic concepts, mathematical sentences are given without a word problem (in order to allow more practice problems in less space). The variables that are most often used in these instances are x and n. Rather than mixing it up for these practice problems, it seems prudent that a single letter or symbol should be chosen as the standard mathematical variable. What 3 letters or symbols should not be used? Explain why you chose these.
Objective (s) Numbers: Outcomes:	5.03 Solve simple (one- and two-step) equations or inequalities.
Materials: Anticipatory Set:	Textbook pages 58-61; balance; various objects Today we learn about equations and substitution.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (create a table) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Equations are mathematical sentences that have an equals sign. The equals sign shows you that the quantities on either side are equal in value. Whatever you add or take away from one side of the equation, must be added or taken away from the other side to keep the balance. Have the students measure the mass of a chosen object using a balance. Then have the students use equations to find the mass of $3o$ and $12o$.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use a 4x4 to model substitution. Practice evaluating the solutions as true or false for the following problems. {4n + 5 = 31, n = 6} {36 \div n = 4, n = 9} {27 - 2n = 7, n = 10} {144/n = 26, n = 6}
	After the Lesson
Independent Practice	Text page 60-61 {1–20, 33–41 odd, 46–54} AIG: {21–54} Assign workbook page 2.3
Closure / Assessment:	Select your 5 favorite foods and research the number of grams of sugar in each. Create a table showing the results. Then create a second table that shows only one of the results and write an algebraic expression for each of the missing results. (see sample)

Integration with School-wide Focus: Improve mathematics computation and problem solving.

Related Math6.org Activities: Substitution Guided Practice **Use a Table There are 6 activities connected with this lesson

Lion

Rabbit

Zebra

Z + 10

C/2

R+5

Math Objectives

5.03 Solve simple (one- and twostep) equations or inequalities.

Essential Question

During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so

that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?

Wayne County Schools 21st Century Instructional Lesson Plan Solving Addition Equations

NAME: Subject: Math Grade Level (s): 6 Date: Standards/Objectives Addressed (NCSCOS) 5.03 Solve simple (one- and two-step) equations or inequalities. **Essential Question(s)** (In student-friendly terms) During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality? Assess (Look at student data to plan. Use formative and/or summative assessments.) Assess student knowledge of algebraic expressions and variables. High Yield Instructional Strategies (check all that apply to the lesson) Identifying similarities Reinforcing effort and Nonlinguistic Setting objectives and differences providing recognition representation and providing feedback Summarizing and note Questions, cues, and Cooperative Generating and learning advance organizers taking testing hypotheses Homework and practice **Learner Diversitv** How will you differentiate to meet the needs of all learners in your class? 504 modifications ET and RA. Additional student and teacher modeling, paired learning groups, and concrete representations will help to guide all students to reach expected outcomes. Differentiated assignments and practice will focus on remediation and enrichment of lower and higher ability groups. Engage (Anticipatory Set) Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion. Discuss inverse. Have students call the inverses to various topics. Today we will be learning how to use inverse operations to solve equations with addition.

	air	n this Lesson			
Coaching	✓ Providing Directions/		~	Learning Centers	
Discussion	~	Providing opportunities for practice	~	Teacher-directed Questions and Answers	~
Hands-on experiences	✓	Direct Instruction	✓	Modeling	✓
Presentation	~	Testing		Other: Math6.org	✓
Suggested brained-based learning Think-Pair-Share	g act ✓	ivities promoting the ab	ove	Instructional Practices Music/Rhyme/Rhythm/Rap	
	•	Student Facilitators		Movement	
Technology Integration	✓ ✓	Storytelling		Humor Project/Problem_Pased Learning	
Metaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics	
Peer/Self Assessment	√	Drawing or illustrating	~	Other:	
Writing/Reflecting/ Journals	~	Simulations/Role Play		Other:	
Whiting/Reflecting/30dimais		Simulations/Role Play		other.	
 Give students time to thin Give students the opportual apply it to a real-world site 	nk, p inity tuati	lan, investigate and orga to expand and solidify t on.	anizo their	e collected information. r understanding of the concept and/c	or
Evaluate (Feedback/Closur • Evaluate throughout the I • Present students with a s • What assessment(s) will	esso corii	on. Are students able to ng guide (such as a rubr	ans ic) a	wer the Essential Question(s)? It the beginning to self-assess.	
Many students require a vis balanced during "alterations balance for each step of the you found the solution.	sual s". s".	clue to assist in rer Choose any probler lution and show how	mer mer mfi wy	mbering to keep equations rom today's work. Draw a ou kept the equation balanced	l as
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Date:	Time Frame: 80 minutes
	Solving Addition Equations
Essential Question:	During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?
Objective (s) Numbers: Outcomes:	5.03 Solve simple (one- and two-step) equations or inequalities.
Materials:	Textbook pages 62-65
Anticipatory Set:	Discuss inverse. Have students call the inverses to various topics. Today we will be learning how to use inverse operations to solve equations with addition.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (sequencing) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	When an equation contains a variable, you make alterations with the purpose of getting the variable to be alone. The alterations use inverse operations to turn values within the equation to 0. The opposite of Addition is Subtraction so Addition and Subtraction are Inverse Operations.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use a 4x4. In box one record the steps for solving equations involving addition. 1. Simplify if possible. 2. Use Inverse Operations to isolate the variable. 3. Check with Substitution. In boxes 2-4 model solutions for $\{29 + n + 13 = 78\}$ $\{16 + n = 45 - 13\}$ $\{42 + n = 52\}$
	After the Lesson
Independent Practice	Text page 64-65 {1–6, 8–16, 36–43} AIG: {1–2, 18–30, 36–43} Assign workbook page 2.4
Closure / Assessment:	Many students require a visual clue to assist in remembering to keep equations balanced during "alterations". Choose any problem from today's work. Draw a balance for each step of the solution and show how you kept the equation balanced as you found the solution.

Integration with School-wide Focus: Improve mathematics computation and problem solving.

Related Math6.org Activities: There are **7** activities connected with this lesson Equations Lesson Addition Equations Guided Practice

**Geometric Algebra

Math Objectives

5.03 Solve simple (one- and twostep) equations or inequalities.

Essential Question

During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?

Wayne County Schools 21st Century Instructional Lesson Plan Solving Subtraction Equations

NAME: Date: Subject: Math

Grade Level (s): 6

Standards/Objectives Addressed (NCSCOS)

5.03

Solve simple (one- and two-step) equations or inequalities.

Essential Question(s) (In student-friendly terms)

During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?

Assess (Look at student data to plan. Use formative and/or summative assessments.)

Assess student success with the lesson on addition equations. Also evaluate/review inverse operations. Fact Families is an important yet overlooked part of today's lesson.

High Yield Instructional Strategies (check all that apply to the lesson)

Identifying similarities and differences	~	Reinforcing effort and providing recognition		Nonlinguistic representation	~	Setting objectives and providing feedback	~	
Questions, cues, and advance organizers	~	Summarizing and note taking	~	Cooperative learning	~	Generating and testing hypotheses		
Homework and practice	✓							

Learner Diversity

• How will you differentiate to meet the needs of all learners in your class?

504 modifications ET and RA. Additional student and teacher modeling, paired learning groups, and concrete representations will help to guide all students to reach expected outcomes. Differentiated assignments and practice will focus on remediation and enrichment of lower and higher ability groups.

Engage (Anticipatory Set)

Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion.

Today we will continue to use inverse operations to solve equations, but this time involving subtraction. Begin by modeling fact families. Have Think/Pair Shares work together to create fact families for several algebraic equations.

Instructional Practices Use	d ir	n this Lesson			
Coaching	~	Providing Directions/	~	Learning Centers	
Discussion	~	Providing opportunities for practice	~	Teacher-directed Questions and Answers	~
Hands-on experiences	\checkmark	Direct Instruction	✓	Modeling	✓
Presentation	~	Testing		Other: Math6.org	~
Suggested brained-based learning Think-Pair-Share Thinking Maps	g act ✓	ivities promoting the ab Instructional Games	ove	Instructional Practices Music/Rhyme/Rhythm/Rap	√
Technology Integration	~	Storytelling		Humor	_
Use of visuals	· ✓	Field Trips(Virtual)		Project/Problem- Based Learning	
Metaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics	
Peer/Self Assessment	✓	Drawing or illustrating	✓	Other: Eating M&M's	~
Writing/Reflecting/Journals	✓	Simulations/Role Play		Other:	
 Give students time to thin Give students the opportuation apply it to a real-world site See next page for instruction 	ik, p inity uati	lan, investigate and orga to expand and solidify t on. detail.	aniz heir	e collected information. r understanding of the concept and/o	r
Evaluate (Feedback/Closur • Evaluate throughout the I • Present students with a s • What assessment(s) will I Use the model in box 1 of t examples to help you write Describe, Analyze, Reflect: • How effective was the les understanding? Cite evid support your view.	esso corin be u oda a " son? ence	on. Are students able to ng guide (such as a rubr sed to be sure the stude by's guided practice how to solve subtra ? How did the strategies of student work, perfor	ans ic) a nts Or (ctic help	wer the Essential Question(s)? at the beginning to self-assess. are successful? create a new flow map with on equations" paragraph. p the students deepen their nce, behaviors, and/or remarks to	
 What caused the lesson to What did you do to contril What learning did you tak differently next time? 	o go bute e fro	well? What challenges to the lesson's effective om this lesson to apply t	did y enes co fu	you encounter? s? ture lessons? What would you do	

Date:	Time Frame: 80 minutes
	Solving Subtraction Equations
Essential Question:	During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?
Objective (s) Numbers: Outcomes:	5.03 Solve simple (one- and two-step) equations or inequalities.
Materials:	Textbook pages 66-68; Reteaching 2.5 (Math6.org version); Bag of M&M's per student
Anticipatory Set:	Today we will continue to use inverse operations to solve equations, but this time involving subtraction. Begin by modeling fact families. Have Think/Pair Shares work together to create fact families for several algebraic equations.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (sequencing/how to) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Solving subtraction equations is almost exactly like solving addition equations except that the inverse of subtraction is addition! The other issue is that subtraction is not commutative so you must pay close attention to where you put the addition problems so that your answer looks correct. (see reteaching 2.5 from Math6.org for additional work on the special nature of subtraction problems)
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Modeling Subtraction Equations. Have the students use font size 44 to write the equation {n - 7 = 15}. Put 7 M&M's on top of the -7. Use inverse operations to move the M&M's to the right side of the equation. Find the solution. (repeat with $\{24 = n - 8\}$ and {n - 5 - 4 = 27}
	After the Lesson
Independent Practice	Text page 67-68 {1–15, 17–31 odd, 32, 36–43} AIG: {12–43} Assign workbook page 2.5
Closure / Assessment:	Use the model in box 1 of today's guided practice or create a new flow map with examples to help you write a "how to solve subtraction equations" paragraph.
Integration with School-wide For	cus: Improve mathematics computation and problem solving.

Related Math6.org Activities: There are 7 activities connected with this lesson Solving Equations Lesson Subtraction Equations Guided Practice **Money Math

Name

Reteaching Page 2.5 Solving Subtraction Equations

When an equation contains a **variable**, you make alterations with the purpose of getting the variable to be alone.

Since subtraction is not commutative, you will want to consider using **fact families**, **write the problem backwards**, or **inverse operations** to help isolate the variable. (Writing the problem "backwards" is the same thing as using the addition side of the fact family).

Fact Family		Ba	ckwa	rds	Inverse	Inverse Operation				
19 - a	=	7	19 - a	=	7	19 - a	=	7		
19 - 7	=	а	7 + a	=	19	19 + (a - a)	=	7 + a		
						19	=	7 + a		

Write each of the following "backwards" to get rid of the subtraction.

38 – a = 27	a – 16 = 36	24 – a = 12	37 – a = 22
-------------	-------------	-------------	-------------

Rewrite each problem to remove the subtraction, then solve for *n* in the following equations.

1) <i>n</i> - 7 = 12	(hint – write it backwards)
2) n - 38 = 52	(hint – write it backwards)
3) 18 - n = 4	(hint – use the fact family)
4) 41 - n = 16	(hint – use the fact family)

Math Objectives

5.03 Solve simple (one- and twostep) equations or inequalities.

Essential Question

During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so

that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?

Wayne County Schools 21st Century Instructional Lesson Plan Solving Multiplication Equations

NAME:			Subject: Math							
Date:			Grade Level (s): 6							
Standards/Objectiv	es	Addressed (NCSCOS)								
5.03										
Solve simple (one-	and	two-step) equations	or	inequalities.						
Essential Question(s) (In student-friendly terms	5)							
During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?										
			and	, 5. 54						
Evaluate/review inverse operations. Examine student confidence and capabilities with predict and test strategies.										
High Yield Instructi	ona	al Strategies (check a	all t	hat apply to t	the	lesson)				
Identifying similarities and differences	~	Reinforcing effort and providing recognition	~	Nonlinguistic representation		Setting objectives and providing feedback	~			
Questions, cues, and advance organizers Homework and practice	✓ ✓	Summarizing and note taking	~	Cooperative learning	√	Generating and testing hypotheses				
Learner Diversity • How will you dif	fere	ntiate to meet the needs o	of al	learners in you	r cla	ss?	<u> </u>			
 504 modifications ET and RA. Additional student and teacher modeling, paired learning groups, and concrete representations will help to guide all students to reach expected outcomes. Differentiated assignments and practice will focus on remediation and enrichment of lower and higher ability groups. Engage (Anticipatory Set) Capture the students' attention, stimulate their thinking and help them access prior knowledge. 										
Today we will use inverse operations to solve equations with multiplication.										

Coaching	Instructional Practices Used in this Lesson						
	~	Providing Directions/ Instructions	✓	Learning Centers			
Discussion	~	Providing opportunities for practice	~	Teacher-directed Questions and Answers	~		
Hands-on experiences	~	Direct Instruction	✓	Modeling	✓		
Presentation	~	Testing		Other: Math6.org	~		
	_						
Suggested brained-based learning	jact	ivities promoting the ab	ove	Instructional Practices	<u> </u>		
	•			Music/Rhyme/Rhythm/Rap	_		
I hinking Maps	•	Student Facilitators		Movement			
Technology Integration	✓ √	Storytelling		Humor			
Use of visuals Metaphor/Simile/Analogy	•	Field Trips(Virtual)		Project/Problem- Based Learning			
				Other			
Peer/Self Assessment	•	Drawing or illustrating		Other:	_		
Writing/Reflecting/Journals	~	Simulations/Role Play		Other:			
 Use reflective activities to Give students time to thin Give students the opportu apply it to a real-world sit See next page for instruction	k, p nity uati	rify and modify student i an, investigate and orga to expand and solidify t on. detail.	und aniz their	erstanding. e collected information. · understanding of the concept and/o	or		
 Evaluate (Feedback/Closur Evaluate throughout the le Present students with a set 	esso corin be u	n. Are students able to 1g guide (such as a rubr sed to be sure the stude	ans ic) a	wer the Essential Question(s)?			
 What assessment(s) will I Today's enrichment @ Math like you to complete this en algebra for each problem. 	n6.c iricł	org will compare, pronument or complete v	edio wor	are successful? ct, and test with algebra. I we ksheet 2.6ext modeling the	ould		

Date:	Time Frame: 80 minutes
	Solving Multiplication Equations
Essential Question:	During the next three lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?
Objective (s) Numbers: Outcomes:	5.03 Solve simple (one- and two-step) equations or inequalities.
Materials: Anticipatory Set:	Textbook pages 69-72; Extension page 2.6 Today we will use inverse operations to solve equations with multiplication.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (compare/contrast) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Multiplication equations are very common. We have used the Predict and Test (aka Guess and Check) method in the previous years to solve these equations without using algebra. Now that we understand inverse operations and keeping the balance of an equation, we can do away with most of the predict and test problems and replace them with algebra.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use a 4x4. In box one record the steps for solving equations involving addition. 1. Simplify if possible. 2. Use Inverse Operations to isolate the variable. 3. Check with Substitution. In boxes 2-4 model solutions for $\{5n = 85\}$ $\{115 - 5 * 3 = 4n\}$ $\{3n = 130 - 52\}$
	After the Lesson
Independent Practice	Text page 71-72 {1–6, 8–16, 19–33 odd, 42–48} AIG: {18–38, 40–48} Assign workbook page 2.6
Closure / Assessment:	Today's enrichment @ Math6.org will compare, predict, and test with algebra. I would like you to complete this enrichment or complete worksheet 2.6ext modeling the algebra for each problem.

Integration with School-wide Focus: Improve mathematics computation and problem solving.

 Related Math6.org Activities:
 There are 7 activities connected with this lesson

 Equations Lesson
 Multiplication Equations Guided Practice

 **More Money Math
 **

Extension Money Math

Multiplication Equations are very helpful when trying to figure out how long, how much and how many hours answer to real world money problems. Try the following problems so that you can see how this algebra is used in the real world. Write a multiplication equation to solve each of these problems. Then find the solution

- 1) Mrs. Johnson is paid monthly but goes to the grocery store every week. She wants to make sure that she doesn't run out of money for food at the end of the month (some months have 5 weeks so we need to use 5 weeks for a month). If she puts aside \$300 when she gets paid, how much money can she spend in the grocery store each week?
 - 2) Mrs. Smith didn't use algebra to calculate her monthly reserve and put aside \$400 for groceries. Mrs. Smith has 3 children and spends \$125 per week in the grocery store. How much money will she need to draw from savings to cover her error?
 - ____3) Anna wants to earn \$135 to buy a new bicycle. She earns an average of \$15 each time she does a baby-sitting job. How many times will she need to baby-sit to save enough money for her bicycle?

____4) Anna usually gets 3 baby-sitting jobs per week. She earns an average of \$15 each time she does a baby-sitting job. Anna wants to earn \$135 to buy a new bicycle. How many weeks will it take her to save enough money for the bicycle?

___5) Candid's mother wants to save \$1008 for Christmas presents. She will join a Christmas Club and use the interest on her savings as extra money at Christmas time. If she starts saving in January, how much money does she need to put in the Christmas Club Account each month?

_____6) Mr. Mitchell would like to buy a new set of golf clubs at the end of the school year. He has priced his dream set at \$1600. He will be able to set aside \$400 twice during the period due to special income from bonuses and his website design business. How much money per pay check will he need to set aside to have enough to buy the golf clubs. (a school year is 10 paychecks).

Extension Money Math

-----Key-----

- 1) \$60
- 2) \$225
- 3) 9
- 4) 3 weeks
- 5) \$84
- 6) \$80

Name _____

Math Objectives

5.03 Solve simple (one- and twostep) equations or inequalities.

Essential Question

During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so

that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?

Wayne County Schools 21st Century Instructional Lesson Plan Solving Division Equations

NAME: Subject: Math Grade Level (s): 6 Date: Standards/Objectives Addressed (NCSCOS) 5.03 Solve simple (one- and two-step) equations or inequalities. **Essential Question(s)** (In student-friendly terms) During the next two lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality? Assess (Look at student data to plan. Use formative and/or summative assessments.) Evaluate/review inverse operations and their overall comfort level with the process of solving equations so far. Review/Remediate Fact Families if needed. High Yield Instructional Strategies (check all that apply to the lesson) Identifying similarities Reinforcing effort and Nonlinguistic Setting objectives and differences providing recognition representation and providing feedback Summarizing and note Questions, cues, and Cooperative Generating and advance organizers taking learning testing hypotheses Homework and practice **Learner Diversitv** How will you differentiate to meet the needs of all learners in your class? 504 modifications ET and RA. Additional student and teacher modeling, paired learning groups, and concrete representations will help to guide all students to reach expected outcomes. Differentiated assignments and practice will focus on remediation and enrichment of lower and higher ability groups. Engage (Anticipatory Set) Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion. Would you like to make averages, area and volume problems way too easy for test? Today we will use inverse operations to solve equations with division.

Instructional Practices Used in this Lesson						
Coaching	~	Providing Directions/	√	Learning Centers		
Discussion	~	Providing opportunities for practice	~	Teacher-directed Questions and Answers	~	
Hands-on experiences	✓	Direct Instruction	✓	Modeling	✓	
Presentation	~	Testing		Other: Math6.org	~	
Suggested brained-based learning	ig act	tivities promoting the ab	ove	Instructional Practices		
Think-Pair-Share	~	Instructional Games		Music/Rhyme/Rhythm/Rap		
Thinking Maps	~	Student Facilitators		Movement		
Technology Integration	✓	Storytelling		Humor		
Use of visuals	~	Field Trips(Virtual)		Project/Problem- Based Learning		
	1	Recipiocal reaching		Other	_	
Peer/Sell Assessment	•	Drawing or illustrating		Other:		
Writing/Reflecting/Journals	v	Simulations/Role Play		Other:		
 Use reflective activities t Give students time to thi Give students the opport apply it to a real-world s See next page for instruction 	o cla nk, p unity ituati onal	rify and modify student (lan, investigate and orga to expand and solidify t ion.	undo aniz their	erstanding. e collected information. r understanding of the concept and/o	r	
 Evaluate (Feedback/Closu Evaluate throughout the Present students with a What assessment(s) will 	re) lesso scorii be u	on. Are students able to ng guide (such as a rubr sed to be sure the stude	ans ic) a ents	wer the Essential Question(s)? at the beginning to self-assess. are successful?		
You now know how to app	ly al	I 4 of the operations	s to	equations with variables. Cre	eate	
a 4x4. Select one problem	n for	each operation and	m	odel its solution. Then on the		
back of the 4x4, write a pa	iragi	raph or poem about	the	e equation operation you find	to	
be the easiest or most inte	erest	ing. (you need not	t ex	kplain why - you may write a le	ove	
poem, a eulogy, sermon, r	news	spaper article)				
 Describe, Analyze, Reflect How effective was the le understanding? Cite evid support your view. What caused the lesson for What did you do to controine What learning did you ta 	: sson dence to go ibute ke fre	? How did the strategies e of student work, perfor well? What challenges e to the lesson's effective om this lesson to apply t	helj rmai did enes co fu	p the students deepen their nce, behaviors, and/or remarks to you encounter? ss? uture lessons? What would you do		
differently next time?						

Date:	Time Frame: 80 minutes
	Solving Division Equations
Essential Question:	During the next couple of lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?
Objective (s) Numbers: Outcomes:	5.03 Solve simple (one- and two-step) equations or inequalities.
Materials:	Textbook pages 73-75
Anticipatory Set:	Would you like to make averages, area and volume problems way too easy for test? Today we will use inverse operations to solve equations with division. Review/Remediate Fact Families
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading:	Writing (evaluative/students' choice) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation.
Integration of Technology:	Computer, Projector, PowerPoint, Internet
Modeling:	Division equations may look the most complicated but you will find they are the easiest since the inverse of division is multiplication. You will use division equations often during the next 3 years. You know the formula for finding area, averages, circumference and many other formulas. Division equations will help you use those formulas to look for different variables within the formula.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use a 4x4. In box one record the steps for solving equations involving addition. 1. Simplify if possible. 2. Use Inverse Operations to isolate the variable. 3. Check with Substitution. In boxes 2-4 model solutions for $\{n \div 7 = 6\}$ $\{20 - 6 * 3 = n \div 32\}$ $\{n \div 8 = 130 - 53\}$
	After the Lesson
Independent Practice	Text page 74-75 {1–3, 5–7, 9–17, 23–28} AIG: {1–3, 5–7, 9–15, 20–21, 23–28} Assign workbook page 2.7
Closure / Assessment:	You now know how to apply all 4 of the operations to equations with variables. Create a 4x4. Select one problem for each operation and model its solution. Then on the back of the 4x4, write a paragraph or poem about the equation operation you find to be the easiest or most interesting. (you need not explain why - you may write a love poem, a eulogy, sermon, newspaper article)
Integration with School-wide For	cus: Improve mathematics computation and problem solving.

Related Math6.org Activities:	There are 9 activities connected with this lesson
Equations Lesson	**Amazing Averages
Division Equations GP	Guided Practice and Extension

Math Objectives

5.03 Solve simple (one- and twostep) equations or inequalities.

Essential Question

During the next four lessons, your teacher will provide you with an action plan for solving algebraic equations and inequalities. Your teacher will help you to practice and master this plan, so

that you will be able to solve equations regardless of the operations involved. Your task will be to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?

Wayne County Schools 21st Century Instructional Lesson Plan Inequalities

NAME: Date:

Subject: Math Grade Level (s): 6

Standards/Objectives Addressed (NCSCOS)

5.03

Solve simple (one- and two-step) equations or inequalities.

Essential Question(s) (In student-friendly terms)

You have been provided with an action plan for solving algebraic equations and inequalities. Your teacher has helped you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task is to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?

Assess (Look at student data to plan. Use formative and/or summative assessments.)

Evaluate/review inverse operations and their overall comfort level with the process of solving equations so far. Review/Remediate Graphing Inequalities on a Number Line.

High Yield Instructional Strategies (check all that apply to the lesson)

Identifying similarities and differences	~	Reinforcing effort and providing recognition	√	Nonlinguistic representation		Setting objectives and providing feedback	~	
Questions, cues, and advance organizers Homework and practice	✓ ✓	Summarizing and note taking	✓ 	Cooperative learning	✓	Generating and testing hypotheses	~	

Learner Diversitv

How will you differentiate to meet the needs of all learners in your class?

504 modifications ET and RA. Additional student and teacher modeling, paired learning groups, and concrete representations will help to guide all students to reach expected outcomes. Differentiated assignments and practice will focus on remediation and enrichment of lower and higher ability groups.

Engage (Anticipatory Set)

Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion.

Show the students n > 4 and $n \ge 4$. Have the small groups decide and label each graph. Today we will learn to solve and graph whole-number inequalities.

oaching iscussion	Instructional Practices Used in this Lesson						
iscussion	~	Providing Directions/ Instructions	 ✓ 	Learning Centers			
	~	Providing opportunities for practice	~	Teacher-directed Questions and Answers	~		
ands-on experiences	✓	Direct Instruction	\checkmark	Modeling	✓		
resentation	~	Testing		Other: Math6.org	~		
	-			·			
uggested brained-based learnin	<u>g act</u>	ivities promoting the ab	ove	Instructional Practices	-		
nink-Pair-Share	~	Instructional Games		Music/Rhyme/Rhythm/Rap			
ninking Maps	~	Student Facilitators		Movement			
echnology Integration	✓	Storytelling		Humor			
se of visuals		Field Trips(Virtual)		Project/Problem- Based Learning			
etaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics			
eer/Self Assessment	~	Drawing or illustrating		Other:			
/riting/Reflecting/Journals	~	Simulations/Role Play		Other:			
 Use reflective activities to Give students time to thin Give students the opport apply it to a real-world si Give next page for instruction 	o clai nk, pl unity <u>tuati</u> onal	rify and modify student of lan, investigate and orga to expand and solidify t on. detail.	unde anize :heir	erstanding. e collected information. r understanding of the concept and/o	r		
 Evaluate throughout the Present students with a s What assessment(s) will common error when work 	lesso corir <u>be us</u> king	n. Are students able to ng guide (such as a rubri sed to be sure the stude with graphing ineq	ans ic) a nts ual	wer the Essential Question(s)? It the beginning to self-assess. are successful? Ities is that students become			
onfused about the meaning	ig of	the open and close	ea c	circle. Explain to a fifth grader	-		
why the onen circle is used	to i	not include the circle	ed	value in the answer set.			

Date:	Time Frame: 80 minutes
	Inequalities
Essential Question:	You have been provided with an action plan for solving algebraic equations and inequalities. Your teacher has helped you to practice and master this plan, so that you will be able to solve equations regardless of the operations involved. Your task is to evaluate the action plan that is being used to find the solutions, determine if there are any steps that need to be changed (or reworded) and settle on a final action plan for solving all algebraic equations and inequalities. Why is it important that a single plan of action is followed every time you need to solve an equation or inequality?
Objective (s) Numbers: Outcomes:	5.03 Solve simple (one- and two-step) equations or inequalities.
Materials:	Textbook pages 76-77; number lines
Anticipatory Set:	Show the students $n > 4$ and $n \ge 4$. Have the small groups decide and label each graph. Today we will learn to solve and graph whole-number inequalities.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (instructions/how to) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Display the graphs of 6 inequalities and help the students to read and understand the difference between "less than" and "less than or equal to". $\{n < 3\} \{n \le 3\} \{n > 1\} \{n \ge 1\} \{n > 6\} \{n \le 11\}$ Explain that inequalities are solved exactly like equations - they will learn one slight change in seventh grade but that change will be easy after they master the sixth grade level of this skill.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use a 4x4 to model the solutions and graphs for {3n \leq 27} {n + 4 $<$ 10} { n/6 \geq 1} and {n - 11 $>$ 16}
	After the Lesson
Independent Practice	Text page 77 {11-21 odd} AIG: {17, 19, 20 - 24}
Closure / Assessment:	A common error when working with graphing inequalities is that students become confused about the meaning of the open and closed circle. Explain to a fifth grader why the open circle is used to not include the circled value in the answer set.

Integration with School-wide Focus: Improve mathematics computation and problem solving.

Number Lines



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Math Objectives

5.01; 5.02; 5.03

Simplify algebraic expressions and justify the results using the basic properties of rational numbers.

- a. Identity;
- b. Commutative;
- c. Associative;
- d. Distributive;
- e. Order of operations;

Use and evaluate algebraic expressions; Solve simple (one- and two-step) equations or inequalities.

Essential Question

What steps do you think should be taken to ensure that a person is prepared for examination on a set of skills? (action plan)

Wayne County Schools 21st Century Instructional Lesson Plan Algebra Concepts Review

NAME:	Subject: Math								
Date:	Grade Level (s): 6								
Standards/Objectives Addressed (NCSCOS)									
5.01; 5.02; 5.03									
Simplify algebraic expressions and justify the results using the basic properties of									
ational numbers.									
. Identity;									
b. Commutative;	. Commutative;								
c. Associative;									
d. Distributive;									
e. Order of operations;									
Use and evaluate algebraic expressions; So	olve simple (one- and two-step) equations								
or inequalities.									
Essential Question(s) (In student-friendly term	s)								
What steps do you think should be taken to	o ensure that a person is prepared for								
examination on a set of skills? (action plan))								
Access (Look at student data to plan. Use formative	a and (as summative assessments)								
Examine student performance on various s	kill assessments, journals and projects.								
High Yield Instructional Strategies (check	all that apply to the lesson)								
Identifying similarities Reinforcing effort and	✓ Nonlinguistic Setting objectives ✓								
and differences providing recognition	representation and providing								
Ouestiens gues and Summarizing and note	feedback								
advance organizers taking	learning testing hypotheses								
Homework and practice									
Learner Diversity									
How will you differentiate to meet the needs	of all learners in your class?								
504 modifications ET and RA. Additional st	udent and teacher modeling, paired								
learning groups, and concrete representation	ons will help to guide all students to reach								
expected outcomes.									
Engage (Anticipatory Set)									
Capture the students' attention, stimulate the	eir thinking and help them access prior knowledge.								
Consider novelty, meaning and emotion.									
Today we will review the skills that we have	e been studying during this unit. We will								
practice test taking skills and remediate the	ose skills about which we don't feel as								
comfortable as others.									

coaching	\checkmark	Providing Directions/	~	Learning Centers	
Disquesion		Instructions	1	Tapphan diverted Questions and	
Discussion		opportunities for practice	ľ	Answers	
Hands-on experiences		Direct Instruction		Modeling	
Presentation		Testing		Other: Math6.org	~
Suggested brained-based learnin	ng act	ivities promoting the ab	ove	Instructional Practices	
Thinking Mans		Student Facilitators	~	Movement	_
	✓	Storytolling		Humor	_
Use of visuals	-	Field Trips(Virtual)		Project/Problem- Based Learning	
Metaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics	
Peer/Self Assessment	✓	Drawing or illustrating		Other:	
Writing/Reflecting/Journals	~	Simulations/Role Play		Other:	
		5			_
small groupstude	nt pa	irswhole group	р	_<_individual	
 Use reflective activities f Give students time to th Give students the opportapply it to a real-world s 	to cla ink, p tunity situati	rify and modify student lan, investigate and orga to expand and solidify t on.	undo aniz theii	erstanding. e collected information. [.] understanding of the concept and/o	r
 Ose reflective activities of Give students time to the Give students the opport apply it to a real-world set See next page for instruct Evaluate (Feedback/Closu Evaluate throughout the Present students with a What assessment(s) will 	to clar ink, p tunity situati ional ure) e lesso scorir l be u	rify and modify student i lan, investigate and orga to expand and solidify t on. detail. on. Are students able to ng guide (such as a rubr sed to be sure the stude	aniz theii ans ic) a	erstanding. e collected information. · understanding of the concept and/o wer the Essential Question(s)? It the beginning to self-assess. are successful?	r
 Ose reflective activities for activities of Give students time to the Give students the opport apply it to a real-world set of the students with a real-world set of the students with a throughout the set of the set of	to clar ink, p tunity situati ional ire) e lesso scorir I be u g gro on b	rify and modify student of lan, investigate and orga to expand and solidify to on. detail. on. Are students able to ng guide (such as a rubr sed to be sure the stude oups review and disc y the teacher.	ans ic) a cus	e collected information. • understanding of the concept and/o wer the Essential Question(s)? • t the beginning to self-assess. are successful? • their answers before turning	r

Date:	Time Frame: 80 minutes
	Algebra Concepts Review
Essential Question:	What steps do you think should be taken to ensure that a person is prepared for examination on a set of skills? (action plan)
Objective (s) Numbers: Outcomes:	 5.01; 5.02; 5.03 Simplify algebraic expressions and justify the results using the basic properties of rational numbers. a. Identity; b. Commutative; c. Associative; d. Distributive; e. Order of operations; Use and evaluate algebraic expressions; Solve simple (one- and two-step) equations or inequalities.
Materials:	Textbook pages 82-84; Test Form B
Anticipatory Set:	Today we will review the skills that we have been studying during this unit. We will practice test taking skills and remediate those skills about which we don't feel as comfortable as others.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Discuss the value of careful review, the process that should occur when errors are made and the importance of reviewing material that students are less comfortable with.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Discuss Instructions for the review on pages 82-84. Have the students review the Headings and address and questions or requests for immediate remediation.
	After the Lesson
Independent Practice	Text page 82-84 {1 - 59} AIG: {1-59} Assign Test Form B
Closure / Assessment:	Have co-operative learning groups review and discuss their answers before turning their papers in for correction by the teacher.
Integration with School-wide Foo	cus: Improve mathematics computation and problem solving.

Related Math6.org Activities: There are many activities connected with this lesson Vocabulary Matching Practice Practice Test Algebra Quiz Bowl Algebra Millionaire

CHAPTER Chapter Test 2 Form B

Evaluate each expression to find the missing values in the tables

1.	W	<i>w</i> + 12
	3	15
	4	
	5	

2.	x	<u>x</u> 5
	5	1
	10	
	15	

_		
3.	а	8 <i>a</i> + 1
	3	25
	5	
	8	

Find an expression for each table.

4.	W	
	20	8
	18	6
	16	4

5.	У	
	7	56
	8	64
	9	72

Z	
10	31
20	41
40	61
	<i>z</i> 10 20 40

- 7. The temperature at noon on an August day in Houston was 89°F. After a thunderstorm, it dropped 5°F. Write an expression for the new temperature.
- **8.** Company A has 50 more employees than Company B. Let n be the number of employees in Company B. Write an expression for the number of employees in Company A.

Write each phrase as a numerical or algebraic expression.

9. 32 more than w

10. the product of 12 and 6

11. 84 less than *z*

12. the quotient of *r* and 140

Date Class

CHAPTER Chapter Test	
2 Form B, continued	
Write two phrases for each expression.	Solve each equation.
13. <i>f</i> – 12	21. 86 + <i>x</i> = 112
	22. <i>v</i> + 108 = 126
	23. 134 + <i>m</i> = 165
14. <i>w</i> ÷ 15	24. 108 = <i>j</i> - 10
	25. <i>f</i> – 49 = 25
15. 110 + <i>x</i>	26. <i>h</i> – 52 = 120
	27. 16 <i>h</i> = 128
	28. 84 = 4 <i>r</i>
16. 15 <i>w</i>	29. 17 <i>w</i> = 187
	30. $\frac{W}{14} = 7$
	31. $\frac{y}{35} = 9$
Determine whether the given value of the variable is a solution.	32. $\frac{z}{25} = 12$
17. 12 <i>w</i> = 144 for <i>w</i> = 12	33. Lina had <i>x</i> rolls of film developed for the yearbook staff at \$8.00 per roll and spent \$120. How many rolls of
18. 142 = 128 + <i>y</i> for <i>y</i> = 14	film did Lina have developed?
19. $184 + w = 230$ for $w = 414$	34. You plan to buy a DVD player 15 weeks from now. If the DVD player costs \$180, how much money
20. $\frac{w}{64} = 23$ for $w = 16$	to buy it?

Essential Question

If you could press restart, what would you do differently to prepare for today's exam? (decision making)

Wayne County Schools 21st Century Instructional Lesson Plan Algebra Concepts Assessment

NAME:		S	ubject: Math			
Date: Grade Level (s): 6						
Standards/Objective	s Addressed (NCSCOS	5)				
5.01; 5.02; 5.03						
Simplify algebraic ex	pressions and justify t	he i	results using th	e basic properties of		
rational numbers.						
a. Identity;						
b. Commutative;						
c. Associative;						
d. Distributive;	-					
e. Order or operation	S; obrain overaceione: Sc		cimple (one o	nd two stan) aquations		
or inequalities	ebiaic expressions, sc	nve	simple (one- a	nd two-step) equations		
Essential Question(s) (In student-friendly term	s)				
	/ (-)				
If you could press res	start, what would you	do	differently to pr	repare for today's exam?		
(decision making)						
Assess (Look at student	data to plan. Use formative	e an	d/or summative as	sessments.)		
			• • • • • • • • • •	/		
Examine student per	formance on concepts	rev	iew.			
High Yield Instructio	nal Strategies (check	all	that apply to th	e lesson)		
Identifying similarities	Peinforcing effort and	√	Nonlinguistic	Setting objectives		
and differences	providing recognition		representation	and providing		
Ourseliens and		_	Coorentitue	feedback		
advance organizers	taking		learning	testing hypotheses		
Homework and practice						
Learner Diversity						
How will you diffe	rentiate to meet the needs	of a	ll learners in your o	class?		
504 modifications FT	and DA					
Engage (Anticipatory Set)						
 Capture the students' attention, stimulate their thinking and help them access prior knowledge. 						
Consider novelty, meaning and emotion.						
Today we will assess	our mastery of Algebr	a.				

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Date:	Time Frame: 80 minutes
	Algebra Concepts Assessment
Essential Question:	If you could press restart, what would you do differently to prepare for today's exam? (decision making)
Objective (s) Numbers: Outcomes:	5.01; 5.02; 5.03Simplify algebraic expressions and justify the results using the basic properties of rational numbers.a. Identityb. Commutative
Materials:	Cumulative Assessment (Form B)
Anticipatory Set:	Today we will assess our mastery of Algebra.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading:	Writing (evaluation) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation.
Integration of Technology:	Computer, Projector, PowerPoint, Internet
Modeling:	Review the Practice Test, answer questions and model answers.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Discuss the Instructions.

After the Lesson

 Independent Practice
 Assign Cumulative Review Test Form B

 Closure / Assessment:
 Write a paragraph evaluation of your expected performance on this test. What did you do well on? What did you have trouble with? How did you prepare for this test and what would you like to do differently for the next exam?

 Choose a Journal entry to share with your class.

Integration with School-wide Focus: Improve mathematics computation and problem solving.

Related Math6.org Activities: There are many activities connected with this lesson Vocabulary Matching Practice Practice Test Algebra Quiz Bowl Algebra Millionaire

CHAPTER Cumulative Test 2 Form B Select the best answer for questions **9.** What is the value of 12¹? 1-49. **A** 0 **C** 12 **B** 1 **D** 144 **1.** Which number is the greatest? **A** 789,345 **C** 798,378 **10.** The bar graph shows the number of **B** 456,789 **D** 435,089 eggs Catherine gathered each day last week. How many eggs did she 2. What is six million, three hundred gather last week? forty-six thousand, two hundred Eggs Gathered eleven in standard form? 14 **F** 6,346,211 **H** 6,034,621 12 **G** 634,602,111 **J** 2,113,466 10 Numbe 8 **3.** What is the value of 5^3 ? 6 **A** 15 **C** 125 4 **B** 25 **D** 625 2 0 W Th F Sun M Т Sat **4.** What is 8 • 8 • 8 • 8 written in exponential form? Day **F** 32 **H** 4.096 **F** 60 **H** 65 **J** 4⁸ **G** 8⁴ **G** 62 **J** 70 **5.** What is the value of $8 \cdot 4 + 5 - 1$? **11.** At 8:00 A.M., the temperature was 54°F. By noon the temperature was **A** 36 **C** 71 82°F. By how many degrees did the **B** 37 **D** 112 temperature increase? 6. What is the value of $4^2 - (5 - 2) \cdot 3$? **A** 14° **C** 42° **B** 28° **D** 136° **F** 7 **H** 39 **G** 33 **J** 52 **12.** 9² 45^{1} **F** < **7.** $9 \cdot (4 \cdot 3) = (9 \cdot 4) \cdot 3$ is an example H =of which property? **G** > J none of these A Associative **C** Distributive **13.** Round to the largest place value to **B** Commutative **D** Exponential estimate 567 + 129. **A** 600 **C** 800 8. Find the next two terms in the sequence: 4, 8, 12, 16, ... **B** 700 **D** 900 **F** 20, 26 **H** 64, 128 **G** 32, 64 **J** 20. 24

_____ Date _____ Class _____

CHAP	TER Cumulati	ve Test				
2	Form B, co	ontinued				
14.	John biked 34 mile	s each week for	20.	Which is the greate	est?	
	24 weeks. How far	did he bike after		F 3 ²	H 2 ³	
	24 Weeks?			G 6^2	J 2 ⁵	
	F 58 miles					
15.	G 82 miles What is the expans	J 1,016 miles sion of 7^4 ?	21.	Linda's new pation and 15 feet long. T constructed using	will be 12 feet wide The patio will be "S" shaped pavers.	
A 7 C 7 • 7 • 7		She needs 4 pavers for each square				
	B 7 • 7	D 7 • 7 • 7 • 7		foot. How many paneed?	avers will Linda	
16.	Which numbers are	e listed in order		A 180 pavers	C 720 pavers	
	from least to greate	est?		B 200 pavers	D 900 pavers	
	F 2,341, 5,644, 2,8	391, 9,234				
	G 2,341, 2,891, 5,6	644, 9,234	22.	Lori's social studie	s class is taking a	
	H 9,234, 5,644, 2,8	391, 2,341		tield trip to a muse	um 50 miles from	
,	J 9,234, 5,644, 2,3	341, 2,891		e the class to get		
17. What is 1,347 written in words?			to the museum?	Ũ		
	A One thousand four hundred thirty-seven.			F $\frac{1}{2}$ hour	H $1\frac{1}{2}$ hours	
	B One thousand th forty-seven	nree hundred		G 1 hour	J 2 hours	
C One hundred three hundred		23.	What is the value of	of 8 ³ ?		
	forty-seven			A 24	C 64	
	D One thousand se	eventy-four		B 32	D 512	
18.	Estimate 38.975 –	21.984.	24.	Simplify $7 \cdot 3 + 9$	• 2.	
	F 10.000	H 18.000		F 29	H 60	
	G 17.000	J 22.000		G 39	J 120	
	,	,				
19.	In a 4-H group, a p to contact each me	hone tree is used ember's family for	25.	What is the value $9 \div (1 + 2) \bullet 4^2 -$	of 7?	
special events. The leader calls 3 families. Each family calls 3 other families, and so on. How many families will be called during the 3rd round of calls?			A 17	C 169		
			B 41	D 204		
		ed during the	26.	$3(2 + 4) = (3 \cdot 2) + (3 \cdot 4)$ is an example of which property?		
	A 6	C 27		F Associative	H Distributive	
	B 9	D 81		G Commutative	J Exponential	

Holt Middle School Math Course 1

CHAPTER Cumulative Test	
2 Form B, continued	
 27. A length of yarn 68 cm long is to be cut into exactly 4 pieces of equal length. What is the length of each piece? A 17 cm B 20 cm C 24 cm D 272 cm 	 33. Which of the following is a phrase for y - 9? A the sum of y and 9 B the difference of y and 9 C the product of y and 9 D the quotient of y and 9
 28. Find the next two terms in the sequence: 7, 11, 8, 12, 9, F 12, 13 H 10, 13 G 13, 15 J 13, 10 	 34. Which of the following has a solution of 9? F w + 9 = 9 G 9a = 72 H y − 8 = 11 J p/3 = 3
 29. Which is the solution to the equation 7a = 56? A a = 9 B a = 8 C a = 7 D a = 6 	 35. Evaluate 8h + 4 for h = 4. A 36 C 84 B 64 D 88
30. Find the missing value in the table. a $8a - 5$ 9 67 10 $?$	36. Which expression completes the table? t ?72051438
F 13 H 64 G 52 J 75	F $t + 4$ H $t + 13$ G $3t - 1$ J $\frac{t}{3}$
 31. Which means the "product of a and 8"? A 8 + a C 8a B 8 - a D 8 ÷ a 	 37. Which is a phrase for 3n ÷ 8? A the product of n and 8 B the product of 3n and 8 C the quotient of 3n and 8 D the quotient of n and 8
32. Luke is 12 years old. Luke is 7 years younger than his sister Aimee. Solve $y - 7 = 12$ to find Aimee's age. F 5 H 19 G 12 J 21	38. Which means the "sum of 23 and y"? F $23 + y$ H $23 - y$ G $23 \div y$ J $23y$ 39. Solve $104 = 130 - w$. A 13 C 114 B 26 D 234

Date Class

CHAPTER Cumulative Test 2 Form B, continued **40.** Which of the following has a solution **46.** Which expression matches the phrase of 12? "the quotient of 112 and r"? **F** $\frac{y}{6} = 2$ **H** 6y = 12**F** 112*r* **H** 112 + r **J** v - 5 = 8**G** v + 6 = 14**G** 112 – *r* **J** 112 ÷ *r* **47.** Which of the following is a phrase for **41.** The area of a rectangle is 100 square inches. Its length is 20 inches. What 220 + r?is its width? A the sum of 200 and 20 **A** 5 in. **C** 100 in. **B** the difference of 220 and r **B** 10 in. **D** 200 in. C r more than 220 **D** 220 times *r* **42.** The area of a rectangular deck is 250 square feet. Its length is **48.** Find the missing 9v + 8V 25 feet. What is its width? value in the table. 11 107 F 5 ft **H** 25 ft ? 12 **G** 10 ft **J** 625 ft **F** 108 **H** 116 **43.** The parking lot of a new shopping **J** 920 **G** 112 center is one-fourth the area of the shopping mall. The area of the mall **49.** The graph shows the number of is 250,000 square feet. Find the area vehicles sold per day at a local of the parking lot. dealership. What is the total number **A** 625 ft² **C** 62.500 ft^2 of vehicles sold? **B** 6,250 ft² **D** 625,000 ft² Number of Vehicles Sold **44.** Chantal cut an apple into *a* equal 12 slices. She ate 4 slices and had 10 4 slices left. Which equation models 8 Number the problem? 6 **H** 8*a* = 4 **F** a + 4 = 44 G 4 - a = 2**J** a - 4 = 42 0 Th Sun M Т W F Sat **45.** Which value of *x* makes the equation $\frac{56}{x} = 7$ true? Day

A 40	C 45
B 42	D 50

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A x = 7

B x = 8

C x = 9

D x = 10

Name _

Algebra Assessment

1	А	В	С	D
2	F	G	Н	J
3	А	В	С	D
4	F	G	Н	J
5	А	В	С	D
6	F	G	Н	J
7	А	В	С	D
8	F	G	Н	J
9	А	В	С	D
10	F	G	Н	J
11	А	В	С	D
12	F	G	Н	J
13	А	В	С	D
14	F	G	Н	J
15	А	В	С	D
16	F	G	Н	J
17	А	В	С	D
18	F	G	Н	J
19	А	В	С	D
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23	А	В	С	D
24	F	G	Н	J
25	А	В	С	D
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27	А	В	С	D
28	F	G	Н	J
29	А	В	С	D
30	F	G	Н	J
31	А	В	С	D
32	F	G	Н	J
33	Α	В	С	D
34	F	G	Н	J
35	А	В	С	D
36	F	G	Н	J
37	А	В	С	D
38	F	G	Н	J
39	А	В	С	D
40	F	G	Н	J
41	А	В	С	D
42	F	G	Н	J
43	А	В	С	D
44	F	G	Н	J
45	Α	В	С	D
46	F	G	Н	J
47	А	В	С	D
48	F	G	Н	J
49	А	В	С	D

N	ame	
Ν	ame	

Algebra Assessment

1	А	В	С	D
2	F	G	Н	J
3	А	В	С	D
4	F	G	Н	J
5	А	В	С	D
6	F	G	Н	J
7	А	В	С	D
8	F	G	Н	J
9	А	В	С	D
10	F	G	Н	J
11	А	В	С	D
12	F	G	Н	J
13	А	В	С	D
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16	F	G	Н	J
17	А	В	С	D
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27	А	В	С	D
28	F	G	Н	J
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35	А	В	С	D
36	F	G	Н	J
37	А	В	С	D
38	F	G	Н	J
39	А	В	С	D
40	F	G	Н	J
41	А	В	С	D
42	F	G	Н	J
43	А	В	С	D
44	F	G	Н	J
45	А	В	С	D
46	F	G	Н	J
47	А	В	С	D
48	F	G	Н	J
49	А	В	С	D

Name ____

Algebra Assessment

1	А	В		D
2		G	Н	J
3	А	В		D
4	F		Н	J
5		В	С	D
6		G	Н	J
7		В	С	D
8	F	G	Н	
9	А	В		D
10	F		Н	J
11	А		С	D
12	F		Н	J
13	А		С	D
14	F	G		J
15	А	В	С	
16	F		Н	J
17	Α		С	D
18	F		Н	J
19	А	В		D
20	F		Н	J
21	А	В		D
22	F		Н	J
23	А	В	С	
24	F		Н	J
25	А		С	D
26	F	G		J

27		В	С	D
28	F	G	Н	
29	А		С	D
30	F	G	Н	
31	А	В		D
32	F	G		J
33	А		С	D
34	F	G	Н	
35		В	С	D
36	F		Н	J
37	А	В		D
38		G	Н	J
39	А		С	D
40		G	Н	J
41		В	С	D
42	F		Н	J
43	А	В		D
44	F	G	Н	
45	А		С	D
46	F	G	Н	
47	А	В		D
48	F	G		J
49	А	В		D

Chapter 2 Assessment 100%

> 26 96%

27

25 93%

24 89%

23 85%

22 81%

21 78% 20

74%

19 70%

18 67%

17 63%

59% 16

15 56%

14 52%

48% 13

12 44%

11 41%

10 37%

33% 9