Math6.org Activities for Whole Numbers

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

- ____52) Mid Chapter Quiz
- ____53) Quiz Bowl
- ____54) Practice Test
- ___55) Order of Operations Millionaire
- ___56) Multiplication Properties Millionaire
- ____57) Whole Numbers Millionaire

Activities by Lesson

1.1 Comparing and Ordering

- ____1) Identify Place Values Lesson
- ____2) Place Values (GP)
- ____3) Place Value Machine
- _____4) Place Values Quiz
- ____5) Reading Numbers Lesson
- ___6) Writing Numbers Lesson
- 7) Writing Numbers (GP)
- ____8) Writing Numbers Quiz
- 9) Ordering Numbers (GP)
- 10) Reteaching Worksheet
- 11) Lesson Quiz
 - [12) **Comparing and Ordering Tables

1.2 Estimation

- ___13) Rounding Lesson
- ___14) Rounding (GP)
- ____15) Rounding Machine Activity
- ___16) Rounding Quiz
- 17) Estimation (GP)
- 18) Reteaching Worksheet
- 19) Estimate to Divide Lesson
- 20) Estimate to Divide (GP)
- ____21) Lesson Quiz
 - 22) **Estimation Using Tables

1.3 Exponents

- ___23) Reteaching Worksheet
- ____24) Exponents Lesson
- ____25) Exponents (GP)
- 26) Lesson Quiz
 - _27) **Exponents and Excel

1.4 Order of Operations

- ____28) Reteaching Worksheet
- ____29) Order of Operations Lesson
- ____30) Order of Operations (GP)
- ____31) Lesson Quiz
- ____32) **Order of Operations Algebra
- ____33) **Millionaire!

1.5 Mental Math

- ____34) Use the Properties Worksheet
- ___35) Mental Math Methods Worksheet
- _36) Multiplication Properties Matching
- _____37) Compensation Lesson
- 38) Compensation (GP)
- 39) Compensation Quiz
- ___40) Distributive Property Lesson
- 41) Distributive Property (GP)
- ____42) Distributive Property Quiz
- ____43) Lesson Quiz
 - 44) **Multiplication Properties Millionaire

1.6 Choose a Method

- ____45) Choose a Method Worksheet
- ____46) Lesson Quiz
 - _47) **Psychic Math Magic
 - _____"View" the Trick
 - ____Learn the Trick
 - ____ Psychic Math (GP)

1.7 Find a Pattern

- ____48) Finding Patterns Worksheet
- ____49) Finding Patterns (GP)
- ____50) Lesson Quiz
- ___51) **Use Excel to Find a Pattern

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Word List – 3 Column Notes

Word	Definition	Example
Addend	Numbers that are to be added to find a sum.	5 + 6 = 11
Associative		
Base		
Commutative		
Compatible		
Compensation		
Cubed		
Difference		
Digit		
Distributive		
Dividend		
Divisor		
Estimation		
Exponent		
Exponential		
Expression		
Factor		
Minuend		
Product		
Sequence		
Squared		
Subtrahend		
Sum		

Math Journal - Chapter 1 - The Whole Number Toolbox

- 1.01 Make a double bubble map to compare and contrast the process for rounding and the process for comparing whole numbers. Write a comparison/contrast paragraph about these processes.
- 1.02 To estimate with division, you should look at the divisor first. Create a proper journal entry (restate, explain, give examples) to explain why you should work on the divisor first.
- 1.03 5th graders often get confused about exponents. Many times they think that it is a fancy way to write a multiplication problem. Create a poster or brochure to help fifth graders understand that exponents are repeated multiplication.
- 1.04 Use the order of operations and add parenthesis to the expression; $4 + 6 * 3 \div 2 1$ so that you get at least 4 different correct answers. Show your solution steps for each evaluation.
- 1.05 Create a poster to define and model each of the multiplication properties. Then, choose the property that you think is the most valuable for day to day mathematics and write a persuasive paragraph to help others understand why they too should believe as you do.
- 1.06 Create a double bubble map to help compare and contrast mental math with compatible numbers and compensation. Write a 5 sentence compare and contrast paragraph to detail your conclusions.
- 1.07 Create a rule for a sequence, then present the first six entries for your sequence. (Make a couple of extra copies to test your pattern out on a few of your classmates.) **or** complete the Math6.org extension - Use Excel to find patterns.

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

1.03 Compare and order rational numbers.

Essential Question

What plan could you follow to compare and order whole numbers?

(action plan)

Wayne County Schools 21st Century Instructional Lesson Plan Comparing and Ordering Whole Numbers

NAME:	Subject: Math										
Date:	Grade Level (s): 6										
Standards/Objectiv	es Addr	ess	ed (NCSCOS))							
1.03 Compare and order rational numbers.											
Essential Question(s) (In student-friendly terms)											
Devise a plan you could follow to compare and order whole numbers? (action plan)											
Assess (Look at studer	ASSESS (Look at student data to plan. Use formative and/or summative assessments.)										
Common Errors for Comparing and ordering rational numbers involve a lack of understanding of place values. A quick quiz to assess student skills regarding reading and writing whole numbers will provide data to determine the direction and extensions of this lesson.										ng ons	
High Yield Instructi	onal Str	ate	gies (check a	all t	hat a	ppl	y to	the	lesson)		
Identifying similarities and differences	✓ Reinf provi	orcir ding	ng effort and recognition		Nonlir repres	nguis senta	tic Ition	√	Setting objectives and providing feedback		
Questions, cues, and advance organizers	 ✓ Sumi takin 	mari: g	zing and note	~	Coope learni	erativ ng	'e	~	Generating and testing hypotheses		
Homework and practice	~										
Learner Diversity How will you diff 	ferentiate	to r	neet the needs o	of al	l learn	ers i	n you	r cla	ss?		
504 modifications E learning groups, and expected outcomes. and enrichment of lo	T and R d concre Differe ower an	A. ete i enti d h	Additional stu representatio ated assignm igher ability g	ude Ins Inent grou	nt an will h ts and ups.	d te elp d pra	eache to g actio	er m uide e w	nodeling, paired all students to reac ill focus on remediat	h ion	
Engage (Anticipator • Capture the stud Consider novelty	ry Set) lents' atte r, meaning	ntio g an	n, stimulate the d emotion.	ir th	ninking	and	help	then	n access prior knowledge		
Today we will learn to compare and order whole numbers using place value. We will begin with a review of place values and the place value system. We will use the spinner game to practice.										I	
Instructional Practic	ces Use	d in	this Lesson								
Coaching		~	Providing Direct Instructions	ctior	ns/ 🗸		earni	ng Ce	enters		
Discussion		✓	Providing opportunities f practice	or	V	A A	eache nswe	er-dii ers	rected Questions and	~	
Hands-on experiences		✓	Direct Instruct	ion	~	Í N	lodeli	ng		✓	
Presentation		✓	Testing			Ō	ther:	Mat	h6.org	✓	
				_							

Suggested brained-based learning activities promoting the above 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						
Metaphor/Simile/Analogy	,	Reciprocal Teaching		Mnemonics						
Peer/Self Assessment	~	Drawing or illustrating		Other:						
Writing/Reflecting/Journals	~	Simulations/Role Play		Other:						
Type(s) of Grouping Used: _✓_small group student pairs whole group individual										
 Explain, Explore, Elaborate Content Chunks: How will you divide and teach the content? Transitions should be used every 5-15 minutes to keep the students' brains engaged. Involve students in an analysis of their explorations. Use reflective activities to clarify and modify student understanding. Give students time to think, plan, investigate and organize collected information. Give students the opportunity to expand and solidify their understanding of the concept and/or apply it to a real-world situation. 										
See next page for instructio	nal	detail.								
 Evaluate (Feedback/Closur Evaluate throughout the left Present students with a so What assessment(s) will be 	e) esso corir be u	n. Are students able to ng guide (such as a rubri sed to be sure the stude	ans ic) a nts a	wer the Essential Question(s)? t the beginning to self-assess. are successful?						
Make a double bubble map process for comparing whole these processes.	to d e n	compare and contra umbers. Write a co	st t mp	he process for rounding and t arison/contrast paragraph abo	he out					
 Describe, Analyze, Reflect: How effective was the less understanding? Cite evide support your view. What caused the lesson to What did you do to contrik What learning did you take differently next time? 	son? ence go oute e fro	P How did the strategies of student work, perfor well? What challenges to the lesson's effective om this lesson to apply t	help mar did y enes o fu	o the students deepen their nce, behaviors, and/or remarks to you encounter? s? ture lessons? What would you do						

Date:	Time Frame: 160 minutes
	Comparing and Ordering Whole Numbers
Essential Question:	What plan could you follow to compare and order whole numbers? (action plan)
Objective (s) Numbers: Outcomes:	1.03 Compare and order rational numbers.
Materials: Anticipatory Set:	Textbook pages 12-16; overhead spinner, student spinners Today we will learn to compare and order whole numbers using place value.
	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:	Discuss place value charts. Use the overhead spinner to make 6 digit numbers. Discuss the process of comparing numbers; 1. Line up the digits. 2. Add zeros to make a box. 3. Compare from left to right.
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Have the students turn their paper landscape. Below the "red line", start at the right, write one, ten, 100, skip a space - repeat 3 times. Use colored pencils to highlight each period in a different color. Insert the commas. Name the periods. Use this chart to compare the following number sets. {3,567 ; 3,561} {18,443 ; 1,844} Use the place value chart to order the following sets from least to greatest. {58 ; 166; 85} {115; 151; 111}
Independent Practice	After the Lesson Text page 6-7 {1 - 2, 6 - 8, 15 - 20, 32 - 42} AIG: {1 - 2, 6 - 8, 15 - 18, 29, 30, 32 - 42} Assign workbook page 1.1
Closure / Assessment:	Make a double bubble map to compare and contrast the process for rounding and the process for comparing whole numbers. Write a comparison/contrast paragraph about these processes.

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

Related Math6.org Activities:	There are 13 activities connected with this lesson
Identity Place values Lesson	whing numbers Lesson
Place Values Guided Practice	Writing Numbers Guided Practice
Place Value Machine	Writing Numbers Quiz
Place Values Quiz	Ordering Numbers Guided Practice
Reading Numbers Lesson	**Comparing and Ordering Tables
Place Values Guided Practice Place Value Machine Place Values Quiz Reading Numbers Lesson	Writing Numbers Guided Practice Writing Numbers Quiz Ordering Numbers Guided Practice **Comparing and Ordering Tables

Overhead Spinner



Ones			ds	ousan	Th	z	lillion	v	Billions		
0	Т	н	0	Т	н	0	т	н	0	Т	н

Place Value Game



Billions			P.	1illion	s	Th	ousan	ds	Ones			
н	Т	0	н	Т	0	н	Т	0	н	Т	0	

Math Objectives

1.01c, 1.04c, 1.07

Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil

Essential Question

Discuss an activity when estimation is appropriately used. Defend your decision.

(decision making)

Wayne County Schools 21st Century Instructional Lesson Plan Estimating with Whole Numbers

Date: Standards/Objectives Address		Grade									
Standards/Objectives Address	Date: Grade Level (s): 6										
Standards/Objectives Addressed (NCSCOS)											
1.01c, 1.04c, 1.07 Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.											
Essential Question(s) (In student-friendly terms)											
Discuss an activity when estimation is appropriately used. Defend your decision. (decision making)											
ASSESS (Look at student data to plan. Use formative and/or summative assessments.)											
Examine student readiness and mastery of Whole Number Place Values											
High Yield Instructional Strate	egies (check al	II that	ap	ply to the	e lesson)						
Identifying similarities A Reinforciand differences Providing	ng effort and g recognition	✓ Nor repr	nlingi resei	uistic 🗸	Setting objectives and providing feedback						
Questions, cues, and advance organizers taking	izing and note	✓ Coo lear	pera	ative ✓	Generating and testing hypotheses						
How will you differentiate to r	meet the needs of	f all lear	rner	s in your cl	ass?						
504 modifications ET and RA. learning groups, and concrete expected outcomes. Differenti and enrichment of lower and h	Additional stud representation iated assignme igher ability gr	dent a ns will ents ar roups.	nd hel nd j	teacher i p to guid oractice v	modeling, paired e all students to reach vill focus on remediati	h ion					
Engage (Anticipatory Set) Capture the students' attention Consider novelty, meaning an 	on, stimulate their d emotion.	⁻ thinkir	ng a	nd help the	m access prior knowledge.						
Today we are going to learn about estimating with whole numbers. Make a 2 column T-table on a paper and label the columns, I can estimate when and I need the precise answer when . You and your partner have 3 minutes to put 5 life situation in each column.											
Instructional Practices Used in	n this Lesson										
Coaching	Providing Direct	ions/	~	Learning	Centers						
Discussion	Providing opportunities fo practice	or	~	Teacher-d Answers	irected Questions and	~					
Hands-on experiences✓Presentation✓	Direct Instruction	on	~	Modeling Other: Ma	ath6.org	✓ ✓					

Commented busined based lasma						
Think-Pair-Share		Instructional Games	ove	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:		
Type(s) of Grouping Used small group _✓_stude	: nt pa	irs _✓_whole grou	р	_✓_individual		
Content Chunks: How will Transitions should be us Involve students in an a Use reflective activities Give students time to th Give students the oppor apply it to a real-world s	e you nalysi to clai ink, p tunity situati	divide and teach they ery 5-15 minutes to kee is of their explorations. rify and modify student lan, investigate and org to expand and solidify on.	ne c ep th und aniz theii	ontent? e students' brains engaged. erstanding. e collected information. r understanding of the concept and/c	or	
See next page for instruct	ional	detail.				
 Evaluate (reedback/clost Evaluate throughout the Present students with a What assessment(s) will Make a double bubble mapprocess for comparing whet these processes. 	i lesso scorir <u>I be u</u> o to o ole n	n. Are students able to ng guide (such as a rubr sed to be sure the stude compare and contra umbers. Write a co	ans ric) a ents ast omp	wer the Essential Question(s)? at the beginning to self-assess. are successful? the process for rounding and t parison/contrast paragraph abo	he out	
 Describe, Analyze, Reflect How effective was the lean understanding? Cite evidence of the support your view. What caused the lesson 	: esson? dence to go	P How did the strategies of student work, perforwell? What challenges	helj rmai did j	p the students deepen their nce, behaviors, and/or remarks to you encounter?		
 What did you do to cont What learning did you ta differently next time? 	ribute ake fro	to the lesson's effective om this lesson to apply t	enes to fu	s? Iture lessons? What would you do		

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Date:	Time Frame: 80 minutes
	Estimating with Whole Numbers
Essential Question:	Discuss an activity when estimation is appropriately used. Defend your decision. (decision making)
Objective (s) Numbers: Outcomes:	1.01c, 1.04c, 1.07 Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil
Materials: Anticipatory Set:	Textbook pages 8-11 Today we are going to learn about estimating with whole numbers. Make a 2 column T-table on a paper and label the columns, I can estimate when and I need the precise answer when. You and your partner have 3 minutes to put 5 life situations in each column.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (to instruct/inform, opinion) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	We often don't need an exact answer to solve mathematics problems. Estimates are easy and usually close enough to the exact answer for your needs. Make a double list table. In the left column, list instances when an estimate is acceptable. In the right column, list instances when an exact figure is required.
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 rounding addends, minuends, subtrahends, factors, dividends and divisors. $\{987 + 642\}$ $\{84,238 - 7937\}$ $\{426 \times 63\}$ $\{738 \div 86\}$ Students will probably need additional problems for estimation with division. (use Math6.org Division Estimation Lesson and Guided Practice - 15 minutes)
	After the Lesson
Independent Practice	Text page 10-11 {1–2, 5–8, 11–16, 20, 21, 26–36} AIG: {11–18, 20–36} Assign workbook page 1.2 and Problem Solving 1.2
Closure / Assessment:	To estimate with division, you should look at the divisor first. Create a proper journal entry (restate, explain, give examples) to explain why you should work on the divisor first.

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

Related Math6.org Activities:	There are 12 activities connected with this lesson
Rounding Lesson	Estimation Guided Practice
Rounding Guided Practice	Reteaching Worksheet
Rounding Machine Activity	Estimate to Divide Lesson
Rounding Quiz	Estimate to Divide Guided Practice **Estimation - Using Tables

Math Objectives

1.05, 1.06

Develop fluency in the use of factors, multiples, exponential notation, and prime factorization; Use exponential, scientific, and calculator notation to write very large and very small numbers.

Essential Question

Can you imagine a time when it is easier not to use exponential form? Explain.

(decision making)

Wayne County Schools 21st Century Instructional Lesson Plan Exponents

NAME: Subject: Math											
Date: Grade Level (s): 6											
Standards/Objectives Addressed (NCSCOS)											
1.05, 1.06											
Develop fluency in the use of factors, multiples, exponential notation, and prime											
factorization; Use exponential, scientific, and calculator notation to write very large											
and very small numbers.											
Essential Question(s) (In student-friendly terms)											
Can you imagine a time when it is easier not to use exponential form? Explain.											
(decision making)											
Assess (Look at student data to plan. Use formative and/or summative assessments.)											
ASSESS (LOOK at Student data to plan. Use formative and/or summative assessments.)											
Examine student readi	ness and	d mastery of N	Multip	olicat	ion Fact	s and Multiplication	n				
Skills.											
High Yield Instruction	al Strate	aies (check a	ll tha	at ap	olv to th	e lesson)					
Identifying similarities	Poinforci	a offert and	V N	lopling		Sotting objectives					
and differences	providing	recognition	re	eprese	ntation	and providing feedback					
Questions, cues, and	Summari	zing and note	✓ C	Coopera	ntive 🕨	Generating and					
advance organizers	taking		le	earning		testing hypotheses					
How will you differe	ntiate to i	neet the needs o	of all le	earner	s in your o	class?					
504 modifications ET a	nd DA	Additional stu	Idant	and	toachor	modeling paired					
loarning groups and g	nu KA.	roprosontatio	ne wi	ill hol	n to qui	do all studonts to	road	`			
expected outcomes	lifforonti	ated assignm	onte	and i	p to gui practico	will focus on rem	odiati	ion			
and enrichment of low	ar and h	igher ability c	roun	anu j s	JI active	will locus off ferri	Sulati				
		igner ability g	ji oup	5.							
Engage (Anticipatory S	Set)										
Capture the student Capsider payalty m	s' attentic	on, stimulate thei	ir thinl	king a	nd help th	em access prior know	ledge.				
consider noverty, m	eaning an	a emotion.									
					_						
Today we will learn abo	out expo	onents and ex	pone	ntial	form an	id figure out some	way	S			
to help the 5 th graders	rememi	per and under	stanc	d tha	t Expone	ents represent rep	beate	d			
Multiplication – not rep	eated A	ddition.									
Instructional Practices	Used in	n this Lesson									
Coaching	✓	Providing Direct Instructions	tions/	/ /	Learning	Centers					
Discussion	\checkmark	Providing	or	~	Teacher-	directed Questions an	d	\checkmark			
		practice			Answers						
Hands-on experiences		Direct Instructi	ion	✓	Modeling	1		 ✓ 			
Presentation	~	Testing			Other: N	Nath6.org		✓			

Suggested brained-based learning	g act √	ivities promoting the ab	ove √	Instructional Practices	
	•	Student Eacilitators	-	Movement	· ·
		Student Facilitators	-	Humor	
Use of visuals	• ✓	Field Trins(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:	
Type(s) of Grouping Used:	t pa	irswhole grou	ıp	_√_individual	
Explain, Explore, Elaborate Content Chunks: How will y Transitions should be use Involve students in an an Use reflective activities to Give students time to thin Give students the opportu apply it to a real-world sit	/OU d ev alysi clar k, pl nity unity	divide and teach they 5-15 minutes to keeps of their explorations. rify and modify student lan, investigate and org to expand and solidify on.	ne c ep the unde anize their	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/	′or
See next page for instruction	onal	detail.			
Evaluate (Feedback/Closur • Evaluate throughout the I • Present students with a s • What assessment(s) will	'e) esso corir be u:	n. Are students able to ng guide (such as a rubr sed to be sure the stude	ansv ric) a ents a	wer the Essential Question(s)? t the beginning to self-assess. are successful?	
5th graders often get confu	sed	about exponents.	Ma	ny times they think that it is	а
fancy way to write a multip	lica	tion problem. Crea	ite a	a poster, brochure or 30 seco	nd
television commercial to he	lp f	ifth graders unders	tand	that exponents are repeate	d
Describe Archarce Deflect					
 Describe, Analyze, Reflect: How effective was the les understanding? Cite evid support your view. What caused the lesson to What did you do to contri 	son? ence o go bute	How did the strategies of student work, perfo well? What challenges to the lesson's effective	help rmar did y enes	o the students deepen their nce, behaviors, and/or remarks to you encounter? s?	
differently next time?	em	om this lesson to apply	to iu	ture lessons? What would you do	

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Date:	Time Frame: 80 minutes
	Exponents
Essential Question:	Can you imagine a time when it is easier not to use exponential form? Explain. (decision making)
Objective (s) Numbers: Outcomes:	1.05, 1.06 Develop fluency in the use of factors, multiples, exponential notation, and prime factorization; Use exponential, scientific, and calculator notation to write very large and very small numbers.
Materials: Anticipatory Set:	Textbook pages 12-16 Today we will learn about exponents and exponential form.
	During the Lesson
Presentation of Information: Integration of Other Subjects:	Writing (inform / persuade / advertisement) Reading (vocabulary, problem solving, analyzing expectation)
Integration of Reading: Integration of Technology:	Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Exponents are an efficient way to show repeated multiplication. Discuss Base, Exponent, Exponential Form, Squared and Cubed. Special Note: Today's Math6.org extension will teach you how to use a spreadsheet (Excel) to compute exponent problems.
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 exponential form. Practice with 6 cubed; 2 to the sixth ; 5 to the fourth and 10 to the fifth.; Model ten as a base. Have students examine the pattern and results.
	After the Lesson
Independent Practice	Text page 14-15 {1–24, 41–51, 54–64} AIG: {20–23, 25–47, 54–64} Complete the Exponents Quiz @ Math6.org and Assign workbook page 1.3
Closure / Assessment:	5th graders often get confused about exponents. Many times they think that it is a fancy way to write a multiplication problem. Create a poster or brochure or 30 second television commercial to help fifth graders understand that exponents are repeated multiplication.

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

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

 Exponents Lesson
 Exponents Guided Practice

 **Exponents and Excel
 **

CHAPTER Quiz

Section A

Choose the best answer.

1. Which number is greatest?

A 31,432,284	C 31,437,806
B 31,342,284	D 31,432,806

- 2. Which set of numbers is written in order from least to greatest?
 - **A** 3,436; 3,528; 3,241
 - **B** 2,841; 2,532; 2,028
 - **C** 5,189; 5,306; 5,200
 - **D** 12,238; 12,406; 12,513
- 3. Which estimate shows34,309 + 28,452 rounded to the nearest ten thousands?
 - **A** 34,000 + 28,000 = 62,000
 - **B** 30,000 + 30,000 = 60,000
 - **C** 35,000 + 28,000 = 63,000
 - **D** 30,000 + 20,000 = 50,000

- **4.** Mrs. Steven's car travels 25 miles on a gallon of gasoline. The gas tank holds 18 gallons. Which problem will result in an over-estimate of the miles she can travel on a tank of gas?
 - A 20 × 18C 30 × 20B 25 × 18D 20 × 20

5. Which expression is equal to 7^5 ?

A 7 × 5
B 5 × 5 × 5 × 5 × 5 × 5 × 5
C 7 × 7 × 7 × 7 × 7
D 7 × 5 × 7 × 5

6. Which expression is the same as $4 \times 4 \times 4 \times 4$?

A	3 × 4	С	4 ×	4
В	3 ⁴	D	4 ⁴	

CHAPTER Quiz



Choose the best answer.

- **1.** Which number is greatest? **A** 31,432,284 **(C)** 31,437,806
 - **B** 31,342,284 **D** 31,432,806
- 2. Which set of numbers is written in order from least to greatest?
 - A 3,436; 3,528; 3,241
 - **B** 2,841; 2,532; 2,028
 - **C** 5,189; 5,306; 5,200
 - **(D)** 12,238; 12,406; 12,513
- Which estimate shows 34,309 + 28,452 rounded to the nearest ten thousands?
 - **A** 34,000 + 28,000 = 62,000
 - (B) 30,000 + 30,000 = 60,000
 - **C** 35,000 + 28,000 = 63,000
 - **D** 30,000 + 20,000 = 50,000

- **4.** Mrs. Steven's car travels 25 miles on a gallon of gasoline. The gas tank holds 18 gallons. Which problem will result in an over-estimate of the miles she can travel on a tank of gas?
 - A 20 × 18
 C 30 × 20

 B 25 × 18
 D 20 × 20

5. Which expression is equal to 7^5 ?

A 7 × 5 **B** 5 × 5 × 5 × 5 × 5 × 5 × 5 × 5 **C** 7 × 7 × 7 × 7 × 7 **D** 7 × 5 × 7 × 5

6. Which expression is the same as $4 \times 4 \times 4 \times 4$?

A 3 × 4	C 4 × 4
B 3 ⁴	D 4^4

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

What solution strategies would you use to solve a problem where the order of operations might affect the outcome?

(action plan)

Wayne County Schools 21st Century Instructional Lesson Plan Order of Operations

NAME:				Subject: Math						
Date:					Grade Level (s): 6					
Standards/Objectives Addressed (NCSCOS)										
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(s	6) (In stu	uder	nt-friendly terms	5)						
What solution strate operations might aff	gies wo ect the	ould out	you use to s tcome? (actio	olvo on p	e a j lan)	pro	blem w	vhei	re the order of	
Assess (Look at studen	t data to	plar	n. Use formative	and	l/or s	sum	mative a	asses	ssments.)	
Examine student readiness and mastery of basic computation skills and organized approach to problem solving.										
High Yield Instruction	onal Str	ate	gies (check a	all t	hat	ар	ply to t	he	lesson)	
Identifying similarities and differences	 ✓ Reinf provi 	forcin	ng effort and recognition	~	Non repr	ılingı resei	uistic ntation		Setting objectives and providing feedback	
Questions, cues, and advance organizers	 ✓ Sum takin ✓ 	mari g	zing and note	~	Coo lear	pera	ative I	~	Generating and testing hypotheses	
Loarpor Divorcity										
How will you diffe	Eearner 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. 										
Is the value of 2 added to four groups of four 32 or 18? Today we will be learning about the order of operations and beginning to understand the importance and value of the operational rules.										
Instructional Practic	ces Use	d ir	this Lesson							
Coaching		~	Providing Direct Instructions	ctior	ns/	~	Learnin	ng Ce	enters	
Discussion		✓	Providing opportunities f practice	for		~	Teache Answer	r-dir rs	rected Questions and	~
Hands-on experiences		./	Direct Instruct	ion		\checkmark	Modelin	ng		 ✓
Presentation		•	resting				otner:	wat	no.org	×.

Suggested brained-based learning	g act	Instructional Games	oove √	Instructional Practices Music/Rhyme/Rhythm/Ran	
Thinking Mans	✓	Student Facilitators		Movement	
Tochnology Integration	✓	Storytolling		Humor	
	· ✓	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:	
		onnalations/ttole ridy			
Type(s) of Grouping Used: _✓_small group _✓_studer	it pa	irswhole grou	ıp	_✓_individual	
Content Chunks: How will y Transitions should be use Involve students in an an Use reflective activities to Give students time to thir Give students the opportu- apply it to a real-world sin	you d ev alysi o clai nk, p unity tuati	divide and teach thery 5-15 minutes to keets s of their explorations. rify and modify student lan, investigate and org to expand and solidify on.	ne c ep the unde janize their	ontent? e students' brains engaged. erstanding. e collected information. r understanding of the concept and/	or
See next page for instruction	onal	detail.			
 Evaluate (Feedback/Closur Evaluate throughout the I Present students with a s What assessment(s) will 	·e) esso corir be u:	n. Are students able to ng guide (such as a rub sed to be sure the stude	ansv ric) a ents a	wer the Essential Question(s)? It the beginning to self-assess. are successful?	
In your small group, use th expression; 4 + 6 * 3 ÷ 2 · Show your solution steps fo	e oi - 1 : or ea	rder of operations a so that you get at le ach evaluation.	and east	add parenthesis to the 4 different correct answers.	
Describe, Analyze, Reflect: • How effective was the less understanding? Cite evid support your view. • What caused the lesson to • What did you do to contri • What learning did you tak	son? ence o go bute	P How did the strategies of student work, perfo well? What challenges to the lesson's effectiv	s help rmar did y enes	o the students deepen their nce, behaviors, and/or remarks to you encounter? s? ture lessons? What would you do	
differently next time?					

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Date:	Time Frame: 80 minutes						
	Order of Operations						
Essential Question:	What solution strategies would you use to solve a problem where the order of operations might affect the outcome? (action plan)						
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: Anticipatory Set:	Textbook pages 20-23 Is the value of 2 added to four groups of four 32 or 18? Today we will be learning about the order of operations and beginning to understand the importance and value of the operational rules.						
	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 you read a sentence, you always read from left to right. However, in mathematics, you must use the order of operations to evaluate expressions. Learning to work the order of operations correctly will help you to solve algebra problems and guide you into higher math.						
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.						
Guided Practice:	Create a flow map to show the order of operations. Model using the flow map to solve: - $\{28 - 7 * 3 + 6\}$ $\{10 - (15 - 2 * 5)\}$ $\{13 - 4 * 2 + 5 * 6\}$						
	After the Lesson						
Independent Practice	Text page 22-23 {14-19, 20-33, 35, 39-49} AIG: {17-49} Assign workbook page 1.4; Order of Operations Millionaire						
Closure / Assessment:	In your small group, use the order of operations and add parenthesis to the expression; $4 + 6 * 3 \div 2 - 1$ so that you get at least 4 different correct answers. Show your solution steps for each evaluation.						
Integration with School-wide Foc	us: Improve mathematics computation and problem solving.						

Related Math6.org Activities: There are 8 activities connected with this lesson Order of Operations Lesson Guided Practice **Order of Operations Algebra **Millionaire!

Math Objectives

1.04a, 1.07

Analyze computational strategies; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.

Essential Question

Which multiplication property do you think is the most helpful when using mental math? Explain.

(decision making)

Wayne County Schools 21st Century Instructional Lesson Plan Mental Math

NAME:				Subject: Math						
Date:				Grade Level (s): 6						
Standards/Objectives Addressed (NCSCOS)										
1.04a, 1.07 Analyze computational strategies; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.										
Essential Question(s	6) (In stu	uder	t-friendly terms	5)						
Which multiplication math? Explain. (de	proper cision r	ty c nak	lo you think i ing)	s th	ie m	IOS	t helpf	ul w	hen using mental	
Assess (Look at studen	t data to	plar	n. Use formative	and	/or s	um	mative a	asses	ssments.)	
Examine student readiness and mastery of basic computation skills.										
High Yield Instruction	onal Str	ate	gies (check a	all th	hat a	ap	ply to t	the	lesson)	
Identifying similarities and differences	✓ Reint provi	forcir iding	ng effort and recognition	`	Nonl repre	lingi esei	uistic ntation		Setting objectives and providing feedback	
Questions, cues, and advance organizers	 ✓ Sum takin 	mari: Ig	zing and note	~	Coop learr	bera ning	ative I	~	Generating and testing hypotheses	
	·									
How will you diffe	erentiate	to r	neet the needs o	of all	learr	ner	s 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.					h ion					
 Engage (Anticipatory Set) Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion. 										
Today we will work with Mental Math and Multiplication Properties. Review times when Estimation vs. Precise activity. Mental math is not estimation – it's an easy way to find the exact answer. After we complete today's learning, we will learn some great tricks to make mental math even easier!										
Instructional Practic	es Use	d ir	this Lesson							
Coaching		~	Providing Dire	ction	is/	~	Learnir	ng Ce	enters	
Discussion		~	Providing opportunities f practice	for		~	Teache Answei	er-dir rs	rected Questions and	~
Hands-on experiences Presentation		~	Direct Instruct Testing	ion		√	Modelin Other:	ng Mat	h6.org	✓ ✓

Suggested brained-based learning	act √	ivities promoting the ab	ove	Instructional Practices	
Think-Pair-Share	Ť	Instructional Games	v	Music/Rhyme/Rhythm/Rap	
				Movement	_
Technology Integration	✓ ✓	Storytelling	-	Humor	
Metaphor/Simile/Analogy	•	Reciprocal Teaching		Mnemonics	•
Rear/Self Assessment	~	Drawing or illustrating	✓	Other	_
Writing /Deflecting / Journals	· ·	Simulations (Dala Dlay		Other:	_
Whiting/Kenecting/Journais		Simulations/Role Flay		Other.	
Type(s) of Grouping Used: small groupstuden	t pa	irswhole grou	р	_√_individual	
 Content Chunks: How will y Transitions should be used Involve students in an and Use reflective activities to Give students time to thin Give students the opportudents the opportudents the opportudents in a real-world site 	/OU d ev alysi clar k, pl k, pl nity <u>uati</u>	divide and teach they ery 5-15 minutes to kee s of their explorations. Fify and modify student lan, investigate and orga to expand and solidify to on.	ne c p the unde anize their	ontent? e students' brains engaged. erstanding. e collected information. r understanding of the concept and/o	r
See next page for instruction	nal	detail.			
 Evaluate (Feedback/Closur Evaluate throughout the lease throughout thro	re) esso corir pe us	n. Are students able to ng guide (such as a rubr sed to be sure the stude	ansv ic) a ents a	wer the Essential Question(s)? It the beginning to self-assess. are successful?	
Create a poster to define ar	nd r	nodel each of the m	nulti	iplication properties. Then,	
choose the property that vo	ou t	hink is the most val	luat	ble for day to day mathematic	S
and write a persuasive para	ara	inh to help others u	nde	erstand why they too should	
believe as you do	igita		nac	istand why they too should	
 Describe, Analyze, Reflect: How effective was the less understanding? Cite evide support your view. What caused the lesson to What did you do to contril What learning did you tak differently port time? 	son? ence o go oute e fro	P How did the strategies of student work, perfor well? What challenges to the lesson's effective om this lesson to apply t	help rmar did y enes to fu	o the students deepen their nce, behaviors, and/or remarks to you encounter? s? ture lessons? What would you do	
differencity next time?					

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Date:	Time Frame: 80 minutes
	Mental Math
Essential Question:	Which multiplication property do you think is the most helpful when using mental math? Explain. (decision making)
Objective (s) Numbers: Outcomes:	1.04a, 1.07 Analyze computational strategies; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.
Materials: Anticipatory Set:	Textbook pages 24-27 Today we will work with Mental Math and Multiplication Properties. Review times when Estimation vs. Precise activity. Mental math is not estimation – it's an easy way to find the exact answer. After we complete today's learning, we will learn some great tricks to make mental math even easier!
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (persuasion) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. Computer, Projector, PowerPoint, Internet
Modeling:	Mental Math is a computation method that will help you to understand and analyze computational strategies. Discuss the terms; Commutative, Associative, Distributive, Compatible Numbers and Compensation.
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 1 - model the process of compatible numbers. $\{7 + 15 + 3 + 5\}$ Identify the property that allowed the solution; In box 2 - model the process of compatible numbers. $\{2 * (7 * 5)\}$ Identify the property that allowed the solution; In box 3 - model compensation $\{17 + 28\}$; In box 4 - model compensation $\{83 - 47\}$.
	After the Lesson
Independent Practice	Text page 26-27 {1–24, 37–49 odd, 53–59} AIG: {17–59} Assign workbook page 1.5
Closure / Assessment:	Create a poster to define and model each of the multiplication properties. Then, choose the property that you think is the most valuable for day to day mathematics and write a persuasive paragraph to help others understand why they too should believe as you do.

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

Related Math6.org Activities:	There are 13 activities connected with this lesson
Use the Properties Worksheet	
Mental Math Methods Worksheet	Distributive Property Lesson
Multiplication Properties Matching	Distributive Property Guided Practice
Compensation Lesson	Distributive Property Quiz
Compensation Guided Practice	**Multiplication Properties Millionaire
Compensation Quiz	

Math Objectives

1.04a, 1.07

Analyze computational strategies; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.

Essential Question How could you effectively test mental math skills using a multiple choice test? (action plan)

Wayne County Schools 21st Century Instructional Lesson Plan Choose a Method of Computation

NAME: Subject: Math										
Date:				Gra	ade	Le	vel (s):	6		
Standards/Objectiv	ves Add	ress	ed (NCSCOS))						
1.04a, 1.07 Analyze computational strategies; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.										
Essential Question	S) (In st	uden	it-friendly terms	5)						
How could you effectively test mental math skills using a multiple choice test? (action plan)										
Assess (Look at student data to plan. Use formative and/or summative assessments.)										
Examine student readiness and mastery of basic computation skills. Quick Quiz 1.6										
High Yield Instructi	onal St	rate	gies (check a	all t	hat	ар	ply to t	he	lesson)	
Identifying similarities and differences	 ✓ Reir prov ✓ Sum 	forcir /iding	ng effort and recognition	✓ ✓	Non repr	ling esei	uistic ntation	~	Setting objectives and providing feedback	
advance organizers Homework and practice	taki ✓	ng			lear	ning			testing hypotheses	
Learner Diversity • How will you dif	ferentiate	e to r	neet the needs o	of all	l lear	ner	s in your	cla	ss?	
504 modifications E learning groups, an expected outcomes and enrichment of I	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.								h ion	
Engage (Anticipato Capture the study Consider novelty	 Engage (Anticipatory Set) Capture the students' attention, stimulate their thinking and help them access prior knowledge. Consider novelty, meaning and emotion. 									
Today we will work with choosing a method of computation and justifying our choice. Share the Psychic Math Trick as described @ http://www.math6.org/whole_numbers/mental_math_magic_lesson_launch.htm.										
Instructional Practi	ces Use	ed in	this Lesson							
Coaching		√	Providing Direct Instructions	ctior	ns/	✓ 	Learnin	g Ce	enters	
Discussion		~	Providing opportunities f practice	for		~	Teache Answer	r-dir ˈs	rected Questions and	~
Hands-on experiences		√	Direct Instruct	ion		✓	Modelin	ng Mati	h6 ora	\checkmark
i i cocintation		1	rearing				other.	wat	10.019	

Suggested brained-based learn Think-Pair-Share	ing act	Instructional Games	bove	Instructional Practices Music/Rhyme/Rhythm/Rap	
Thinking Maps		Student Facilitators	-	Movement	
Tochnology Integration		Storutolling		Humor	
	· ·	Field Trips(Virtual)		Project/Problem- Based Learning	✓
Metaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics	
Peer/Self Assessment	~	Drawing or illustrating	✓	Other: Magic	✓
Writing/Reflecting/ Journals	✓	Simulations/Role Play		Other:	
Type(s) of Grouping Used small group _✓_stude	l: ent pa	irs whole grou	p	individual	
Content Chunks: How wil Transitions should be u Involve students in an a Use reflective activities Give students time to th Give students the opport apply it to a real-world	I you sed eve analysi to clar nink, pl rtunity situati	divide and teach the ery 5-15 minutes to kee s of their explorations. "ify and modify student an, investigate and org to expand and solidify on.	ne c ep th unde anize their	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and	l/or
See next page for instruc	tional	detail.			
Evaluate throughout the Present students with a What assessment(s) with Create a double bubble m compatible numbers and paragraph to detail your of	e lesso scorir <u>II be us</u> nap to comp conclu	n. Are students able to bg guide (such as a rubr sed to be sure the stude help compare and ensation. Write a isions	cor 5 so	wer the Essential Question(s)? It the beginning to self-assess. are successful? Itrast mental math with entence compare and contra	est
 Describe, Analyze, Reflect How effective was the lunderstanding? Cite evidence of the support your view. What caused the lesson What did you do to control What learning did you the differently next time? 	t: esson? ridence to go tribute ake fro	How did the strategies of student work, perfo well? What challenges to the lesson's effective om this lesson to apply t	s help rmar did y enes to fu	o the students deepen their nce, behaviors, and/or remarks to you encounter? s? ture lessons? What would you do	

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Date:	Time Frame: 80 minutes
	Choose a Method of Computation
Essential Question:	How could you effectively test mental math skills using a multiple choice test? (action plan)
Objective (s) Numbers: Outcomes:	1.04a, 1.07 Analyze computational strategies; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.
Materials: Anticipatory Set:	Textbook pages 28-30; Quick Quiz 1.6 Today we will work with choosing a method of computation and justifying our choice.
	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:	Review Mental Math with Quick Quiz 1.6. Share the Psychic Math Trick as described @ http://www.math6.org/whole_numbers/mental_math_magic_lesson_launch.htm.
	Have the students create a triple list table to show each method, discuss the decision making process and the reason to choose a method. Have the students add an additional row to show a numerical model for each. (see http://www.math6.org/whole_numbers/1.6.htm for a model of this table)
Differentiation:	504 modifications ET and RA. Additional student and teacher modeling will help to guide all students to reach expected outcomes.
Guided Practice:	Use the following problems to walk the students through the decision process and reasoning for choosing a method. $\{17 + 5 + 3 + 15\}$, $\{4 * 13 * 5\}$, $\{9,288 \div 24\}$
	After the Lesson
Independent Practice	Text page 29-30 {1–17, 21–27} AIG: {1–6, 7–17 odd, 18–27} Assign workbook page 1.6
Closure / Assessment:	Create a double bubble map to help compare and contrast mental math with compatible numbers and compensation. Write a 5 sentence compare and contrast paragraph to detail your conclusions.
Integration with School-wide Foc	us: Improve mathematics computation and problem solving.
Related Math6.org Activities:	There are 7 activities connected with this lesson

Related Math6.org Activities: **Psychic Math Magic Trick

Psychic Math Trick

- If you have never seen this trick, you should review the "sample" trick as shown @ <u>http://www.math6.org/whole_numbers/mental_math_magic_lesson_launch.htm</u>.
- > The idea is that you will complete an addition problem **before** it is made up.
 - A student gives you any number.
 - You write down the answer to an addition problem and put it in a place where you are sure no child will accuse you of changing the answer later.
 - More numbers are given and the sum is the answer you wrote down.
 - Here's how it is done.

ere	s now it is done.	First Child	48 361	248 359
•	Your numbers are bold.	Second Child	37,658	210,000
	Notice that your digits bring the total place		62,341	
	value to 9 in each case.	Third Child	97,600 2 399	
•	You are adding 99,999 (twice)	Sum	248,359	

• For a total of 199,998 (or 200,000 added to the front and -2 from the back)

Your students will be amazed and this is a great introduction to compensation **and** compatible numbers. For more assistance and practice with this trick go to the <u>extension activities for lesson 1.6</u> where you will find a lesson, guided practice and "quiz".

Math Objectives

1.07

Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.

Essential Question

Is there a method that will make finding, recognizing, describing, and extending patterns in sequences easier to see?

(action plan)

Wayne County Schools 21st Century Instructional Lesson Plan Find a Pattern

NAME:	Subject: Math						
Date:		Grade Le	evel (s):	6			
Standards/Objectives Addressed (NCSCOS)							
Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and poncil							
Essential Question(s) (In student-friendly terms)							
	adent-menaly terms	>/					
Is there a method that will make finding, recognizing, describing, and extending natterns in sequences easier to see? (action plan)							
ASSESS (Look at student data to	plan. Use formative	and/or sur	nmative a	sses	ssments.)		
Examine student readiness and mastery of basic computation skills. Determine which students will have the most difficulty applying an organized approach and consider their needs for Student Facilitators.							
High Yield Instructional St	rategies (check	all that ap	oply to t	he l	lesson)		
Identifying similarities Rein 	forcing effort and	✓ Nonling	guistic		Setting objectives ✓		
		Tepres			feedback		
Questions, cues, and ✓ Sum	marizing and note	✓ Cooper learnin	ative	~	Generating and testing hypotheses		
Homework and practice \checkmark	ig	learnin	9		testing hypotheses		
Learner Diversity How will you differentiate	e to meet the needs	of all learne	rs in your	clas	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. 							
Have think share pairs discuss and present 3 patterns from nature/history or science. Today we will work with finding, recognizing, describing, and extending patterns in sequences.							
Instructional Practices Use	d in this Lesson						
Coaching	 Providing Dire Instructions 	ctions/ 🗸	Learnin	ig Ce	enters		
Discussion	✓ Providing	√ For	Teacher	r-dir	ected Questions and	~	
	practice		Answer	3			
Hands-on experiences	Direct Instruct	tion 🗸	Modelin	ng		✓ ✓	
Presentation ✓ Testing Other: Math6.org ✓							

Suggested brained-based learni	na act	ivities promoting the al	hove	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	✓
Metaphor/Simile/Analogy		Reciprocal Teaching		Mnemonics	
Peer/Self Assessment	~	Drawing or illustrating	~	Other:	
Writing/Reflecting/Journals	~	Simulations/Role Play		Other:	
Type(s) of Grouping Used small group _✓_stude	l: ent pa	irswhole grou	р	_✓_individual	
 Transitions should be us Involve students in an a Use reflective activities Give students time to th Give students the opportant opply it to a real-world 	sed ev analysi to clan nink, p tunity situati	ery 5-15 minutes to kee is of their explorations. rify and modify student lan, investigate and org to expand and solidify on.	ep th unde ganize their	e students' brains engaged. erstanding. e collected information. - understanding of the concept and,	⁄or
See next page for instruct	tional	detail.			
 Evaluate (Feedback/Close) Evaluate throughout the Present students with a What assessment(s) with 	ure) e lesso scorir be u	n. Are students able to ng guide (such as a rub sed to be sure the stude	o ansv ric) a ents a	wer the Essential Question(s)? It the beginning to self-assess. are successful?	
Create a rule (hide it) for sequence. (Make a couple classmates.) or complete	a sec e of e the N	quence, then prese extra copies to test lath6.org extensior	nt th you n - L	ne first six entries for your Ir pattern out on a few of you Jse Excel to find patterns.	ır
 Describe, Analyze, Reflec How effective was the lunderstanding? Cite ev support your view. What caused the lesson What did you do to control 	t: esson? idence to go rribute	P How did the strategies of student work, perfo well? What challenges to the lesson's effectiv	s help ormar did y venes	o the students deepen their nce, behaviors, and/or remarks to you encounter? s?	
 What learning did you t differently next time? 	ake fro	om this lesson to apply	to fu	ture lessons? What would you do	

Date:	Time Frame: 80 minutes
	Find a Pattern
Essential Question:	Is there a method that will make finding, recognizing, describing, and extending patterns in sequences easier to see? (action plan)
Objective (s) Numbers: Outcomes:	1.07 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.
Materials: Anticipatory Set:	Textbook pages 31-33 Have think share pairs discuss and present 3 patterns from nature/history or science. Today we will work with finding, recognizing, describing, and extending patterns in sequences.
	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:	Tables organize data clearly and in a small space. They are excellent for quickly finding information. Spreadsheets and tables go together well and allow you organize table data easily in many ways. When you enter a pattern into a table, you will easily see how to analyze the data, find the pattern and continue the pattern.
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 build tables, analyze and continue the patterns for the following sequences. $\{8, 12, 16, 20\}, \{5, 8, 6, 9, 7\}, \{1, 1, 2, 3, 5, 8, 13\}$
	After the Lesson
Independent Practice	Text page 32-33 {5-9, 11-16, 20, 21 26-36} AIG: {11- 36} Assign workbook page 1.7
Closure / Assessment:	Create a rule (hide it) for a sequence, then present the first six entries for your sequence. (Make a couple of extra copies to test your pattern out on a few of your classmates.) or complete the Math6.org extension - Use Excel to find patterns.

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

Related Math6.org Activities: There are 6 activities connected with this lesson Finding Patterns Guided Practice **Use Excel to Find a Pattern

Math Objectives

1.01c, 1.03, 1.04a, 1.04c, 1.05, 1.06, 1.07, 5.01

Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil; Compare and order rational numbers; Develop fluency in the use of factors, multiples, exponential notation, and prime factorization; Use exponential, scientific, and calculator notation to write very large and very small numbers; Analyze computational strategies; 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

What plan could you follow to compare and order whole numbers?

(action plan)

Wayne County Schools 21st Century Instructional Lesson Plan Whole Numbers Concepts Review

NAME: Subject: Math							
Date:		Gr	ade Level (s)	: 6			
Standards/Objectives	Addressed (NCSCOS))					
Standards/Objectives Addressed (NCSCOS) 1.01c, 1.03, 1.04a, 1.04c, 1.05, 1.06, 1.07, 5.01 Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil; Compare and order rational numbers; Develop fluency in the use of factors, multiples, exponential notation, and prime factorization; Use exponential, scientific, and calculator notation to write very large and very small numbers; Analyze computational strategies; Simplify algebraic expressions and justify the results using the basic properties of rational numbers. a. Identity; b. Commutative; c. Associative; d. Distributives a Order of anomations							
Essential Question(s)	(In student-friendly terms	5)					
What steps do you thir examination on a set c	nk should be taken to of skills? (action plan)	en	sure that a p	ersc	on is prepared for		
Assess (Look at student d	ata to plan. Use formative	and	l/or summative	asse	ssments.)		
Examine student performance on various skill assessments, journals and projects.							
High Yield Instruction	al Strategies (check a	all t	hat apply to	the	lesson)		
Identifying similarities and differences Questions, cues, and	Reinforcing effort and providing recognition Summarizing and note	 ✓ ✓ 	Nonlinguistic representation Cooperative	 ✓ 	Setting objectives and providing feedback Generating and		
Homework and practice V	taking		learning				
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.							
Engage (Anticipatory S Capture the student Consider novelty, m	Set) s' attention, stimulate the eaning and emotion.	eir tł	ninking and help	then	n access prior knowledge.		
Today we will review th practice test taking ski comfortable as others.	he skills that we have Ils and remediate the	e be se	een studying o skills about w	duri /hicl	ng this unit. We will h we don't feel as		

Coaching	v	Providing Directions/	\checkmark	Learning Centers	Т
		Instructions	Ĺ		
Discussion		Providing opportunities for practice	~	Teacher-directed Questions and Answers	
Hands-on experiences		Direct Instruction		Modeling	
Presentation		Testing		Other: Math6.org	
Suggested brained-based lear Think-Pair-Share Thinking Mans	ning act ✓	ivities promoting the ab Instructional Games	ove	Instructional Practices Music/Rhyme/Rhythm/Rap	Ţ
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/lournals		Simulations/Role Play	+	Other:	+
Fype(s) of Grouping Use	ed: dent pa	irswhole grou	p	./ individual	
Explain, Explore, Elabor Content Chunks: How w Transitions should be Involve students in ar Use reflective activitie Give students time to Give students the opp apply it to a real-worl	ate vill you used even analysi es to clar think, pl ortunity d situation	divide and teach thery 5-15 minutes to kees s of their explorations. Tify and modify student an, investigate and organt to expand and solidify to on.	ne c p th unde anize their	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/o	
Explain, Explore, Elabor Content Chunks: How w Transitions should be Involve students in ar Use reflective activitie Give students time to Give students the opp apply it to a real-worl	rate vill you used even analysi es to clar think, pl portunity d situation	divide and teach they 5-15 minutes to kees s of their explorations. Fify and modify student an, investigate and orgation to expand and solidify to on. detail.	ne c p th unde anize their	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/o	r
Explain, Explore, Elabor Content Chunks: How w Transitions should be Involve students in ar Use reflective activitie Give students time to Give students the opp apply it to a real-worl See next page for instru Evaluate (Feedback/Clo Evaluate throughout t Present students with What assessment(s) w	ate vill you used even analysi es to clar think, pl portunity d situation d situation (tional sure) the lesso a scorin will be us	divide and teach the ery 5-15 minutes to kee s of their explorations. Fify and modify student an, investigate and orga to expand and solidify to on. detail.	ans ans ic) a	ontent? e students' brains engaged. erstanding. e collected information. • understanding of the concept and/o	
Explain, Explore, Elabor Content Chunks: How w Transitions should be Involve students in ar Use reflective activitie Give students time to Give students the opp apply it to a real-worl See next page for instru Evaluate (Feedback/Clo Evaluate throughout t Present students with What assessment(s) v Have co-operative learn their papers in for correct	rate vill you used even analysi es to clar think, pl portunity d situation (ctional vsure) the lesso a scorin will be us ing gro ction by	divide and teach thery 5-15 minutes to kees s of their explorations. Fify and modify student is an, investigate and orgation to expand and solidify to on. detail.	ans ans ic) a cuss	ontent? e students' brains engaged. e collected information. • understanding of the concept and/o wer the Essential Question(s)? to the beginning to self-assess. are successful?	r

Date:	Time Frame: 80 minutes
	Whole Numbers 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:	1.01c, 1.03, 1.04a, 1.04c, 1.05, 1.06, 1.07, 5.01 Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil; Compare and order rational numbers; Develop fluency in the use of factors, multiples, exponential notation, and prime factorization; Use exponential, scientific, and calculator notation to write very large and very small numbers; Analyze computational strategies; 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: Anticipatory Set:	Textbook pages 40-42; Test Form B 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:	Writing (presentation) 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 40-42. Have the students review the Headings and address and questions or requests for immediate remediation.
	After the Lesson
Independent Practice	Text page 40 - 42 {1 - 56} AIG: {1-56} 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 Foc	us: Improve mathematics computation and problem solving.
Related Math6.org Activities: Vocabulary Matching Practice Practice Test	There are many activities connected with this lesson

Whole Numbers Quiz Bowl Whole Numbers Millionaire

CHAPTER Chapter Test	
1 Form B	
Write $<$ or $>$.	Write in exponential form.
1. 37,589 37,409	11. $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$
2. 436,532 438,503	
3. Write in order from least to greatest: 3,290; 3,966; 3,078.	12. 6 × 6 × 6 × 6
	Write as repeated multiplication.
4. Write in order from greatest to least: 8,254; 8,549; 8,375.	13. 3 ³
	14. 5 ⁴
Round to the largest place value to estimate.	
5. 3,620 + 4,485	Find each value.
	15. 4°
6. 13,248 + 17,509	
	16. 7 ¹
7. 2,626 – 1,693	
	17. 3 ⁶
8. 6,558 – 3,249	
	Compare using, $<$, $>$, or =.
Round to the place value indicated to	18. 2 ³ 1 ⁴
estimate the sum or difference.	19. 10,000 10 ⁵
9. 6,658 — 5,250; thousands	20. $2^4 \qquad 4^2$
10. 51,728 + 23,250; thousands	

CHAPTER Chapter Test Form B, continued 1 Simplify each expression. Identify a pattern. Replace ? with missing terms. **21.** 25 - 15 ÷ 3 **32.** 111, 93, 75, ?, 39, ? **22.** $17 + 36 \div 6 \times 3 - 4$ **33.** 5, 8, 14, 23, 35, ?, ?, ? **23.** 57 $- 3^3 + 18$ **34.** 47, 50, 45, 48, 43, 46, ?, ? **24.** $13 + 2^4 - (15 + 8)$ Solve. **35.** In 1966, 103,224 acres of land in **25.** 15 + 30 ÷ (25 – 19) – 17 Florida were used to grow grapefruit. Thirty years later, 144,416 acres were used. What was the increase **26.** $4^2 + 72 \div 9 - 18$ in acreage? Use mental math to solve. **36.** A lion sleeps about 15 hours each day. How many hours does a lion **27.** 28 + 9 + 32 + 7sleep in one year? **28.** 7 + 29 + 11 + 23**37.** The first people to climb Mount Everest started from their base camp at 5.486 meters and climbed to the **29.** $2 \times 8 \times 7 \times 5$ summit at 8,848 meters. How far did they climb? **30.** 7 × 35 **38.** The school theater has 36 rows with 25 seats in each row. How many **31**. 42 × 6 people can sit in the theater?

Date Class

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 Whole Numbers Assessment

NAME: Subject: Math							
Date:		Grade Level (s):	6				
Standards/Objective	s Addressed (NCSCOS)					
1.01c, 1.03, 1.04a, 1.04c, 1.05, 1.06, 1.07, 5.01 Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil; Compare and order rational numbers; Develop fluency in the use of factors, multiples, exponential notation, and prime factorization; Use exponential, scientific, and calculator notation to write very large and very small numbers; Analyze computational strategies; Simplify algebraic expressions and justify the results using the basic properties of rational numbers. a. Identity; b. Commutative; c. Associative; d.							
Essential Question(s	(In student-friendly term	c)					
If you could press re (decision making)	start, what would you	do differently to pr	repare for today's exam?				
Assess (Look at studen)	t data to plan. Use formative	and/or summative as	sessments)				
Examine student per High Yield Instruction	Examine student performance on concepts review. High Yield Instructional Strategies (check all that apply to the lesson)						
and differences	providing recognition	representation	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?							
Engage (Anticipator) • Capture the stude Consider novelty,	y Set) ents' attention, stimulate the meaning and emotion.	eir thinking and help th	nem access prior knowledge.				
Today we will assess	our mastery of Whole	e Numbers.					

ng F		
	oviding Directions/	Learning Centers
sion F	oviding portunities for	Teacher-directed Questions and Answers
on experiences	rect Instruction	Modeling
tation	esting	Other: Math6.org
sted brained-based learning activ	ies promoting the above	Instructional Practices
air-Share	structional Games	Music/Rhyme/Rhythm/Rap
g Maps S	udent Facilitators	Movement
ogy Integration 🗸 S	orytelling	Humor
/isuals F	eld Trips(Virtual)	Project/Problem- Based Learning
or/Simile/Analogy	ciprocal Teaching	Mnemonics
If Assessment	awing or illustrating	Other:
Reflecting/Journals ✓ S	mulations/Role Play	Other:
iall groupstudent pairs in, Explore, Elaborate	whole group	individual
ext page for instructional d	etail.	
ate (Feedback/Closure) Evaluate throughout the lesson. Present students with a scoring What assessment(s) will be use a paragraph evaluation of	Are students able to ansy juide (such as a rubric) a to be sure the students a your expected perfor	wer the Essential Question(s)? It the beginning to self-assess. are successful? mance on this test. What did
o well on? What did you ha hat would you like to do di	ve trouble with? Ho ferently for the next with your class	w did you prepare for this test exam?
ibe, Analyze, Reflect: How effective was the lesson? H understanding? Cite evidence o support your view. What caused the lesson to go w What did you do to contribute to	w did the strategies help student work, performan II? What challenges did y the lesson's effectivenes this lesson to apply to fu	o the students deepen their nce, behaviors, and/or remarks to you encounter? s? ture lessons? What would you do
What caused the lesson to go we What did you do to contribute to	IP What challenges did y the lesson's effectivenes this lesson to apply to fut	you en s? ture le

Date:	Time Frame: 80 minutes
	Whole Numbers 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:	1.01c, 1.03, 1.04a, 1.04c, 1.05, 1.06, 1.07, 5.01 Make estimates in appropriate situations; Estimate the results of computations; Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil; Compare and order rational numbers; Develop fluency in the use of factors, multiples, exponential notation, and prime factorization; Use exponential, scientific, and calculator notation to write very large and very small numbers; Analyze computational strategies; 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: Anticipatory Set:	Cumulative Assessment (Form B) Today we will assess our mastery of Whole Numbers.
	During the Lesson
Presentation of Information: Integration of Other Subjects: Integration of Reading: Integration of Technology:	Writing (evaluation) Reading (vocabulary, problem solving, analyzing expectation) Reading for information and interpretation. 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 lessonVocabulary Matching PracticePractice TestWhole Numbers Quiz BowlWhole Numbers Millionaire

CHAPTER Cumulati	ive Test				
1 Form B					
1. Which number is g	reatest?	8. What is	the value	of 4 × 5 – 1	6 ÷ 4?
A 5,702,542	C 5,783,409	F 5		H 24	
B 5,714,254	D 5,725,295	G 12		J 16	
 Which set of numbroader from greates F 4,389; 4,208; 4, G 5,412; 5,224; 5, H 3,098; 3,019; 3, J 6,508; 6,485; 6, Which number has thousands place? A 345,206 B 506,416 Which number is the set of the set	ers is written in t to least? 417 017 109 754 a 5 in the C 612,563 D 254,268 he standard form	 9. 3 × (10 is an exal A Comm B Distribution 10. Use mernof 4 × 9 F 90 G 160 The chart listone evening 	+ 9) = (3) ample of wind the putive that math the x 5. sts the tag at Taco	 a × 10) + (3 vhich proper C Associa D Expone to find the pr H 180 J 140 aco orders s Hut. 	× 9) ty? tive ntial roduct
for 200,000 + 70,0	000 + 60 + 8?	Chicke)n	123 orders	
F 207,608	H 217,680	Beef		57 orders	
G 270,068	J 270,680	Chees	е	141 orders	
5. Estimate $52,048 +$ A $50,000 + 20,000$ B $52,000 + 28,000$ C $52,000 + 29,000$ D $53,000 + 29,000$ 6. What is $7 \times 7 \times 7$ exponential form? F $2,401$ G $2,000 + 40 + 1$ 7. What is 5^3 written multiplication? A 5×3 B $5 \times 5 \times 5$ C $2 \times 2 \times 2 \times 2 \times 2$	28,612; thousands 0 = 70,000 0 = 80,000 0 = 81,000 0 = 82,000 \times 7 written in H 4 ⁷ J 7 ⁴ as repeated	 11. How ma tacos that tacos that A 198 B 96 12. How ma this even F 211 of G 264 of G 264 of G 264 of How mu walking A 420 m B 600 m 	ny more o an beef ta ny taco or ning? rders rders alks 28 mi rages 15 r ch time do each weel ninutes ninutes	orders of che cos were so C 84 D 93 rders were s H 321 ord J 198 ord les each we minutes per bes she sper k? C 450 mir D 300 mir	eese Id? old on ers ers ek. mile. nd nutes nutes
$\mathbf{D} \ 5 \times 3 \times 5 \times 3$	~ 5 × 5 × 3				
		•			

Date Class

CHAPTER Cumulative Test Form B, continued 1

14. Identify the pattern in this sequence: 8, 10, 9, 11, 10, 12.

F + 1, - 2 **H** – 2, + 1 1

G + 2,
$$-1$$
 J - 2, $-$

- **15.** Identify the pattern. Replace ? with missing terms: 580, 290, 300, ?, 160, 80, ?, 45. **A** 250 and 65 **C** 150 and 90 **B** 200 and 40 **D** 160 and 100
- **16.** What is the decimal, five and twelve thousandths, in standard form?
 - **F** 5.12 **H** 5.0012 **G** 5.012 **J** 0.5012
- **17.** Caleb bought a t-shirt at the Aguarium for \$7.99. He gave the clerk \$10. How much change did he receive?

A \$2.01 **C** \$12.01 **B** \$3.99 **D** \$3.01

- **18.** What is the value of x for x - 6 = 9 + 11?**F** 26 **H** 14 **G** 20 J 11
- **19.** Cassandra recorded the weights of her five cats at 10, 11, 8, 15 and 11 pounds. What is the average weight of her cats?
 - A 8 pounds **C** 11 pounds

D 15 pounds

B 10 pounds

20. Which graph or table is most appropriate to display the ticket price data?

1990	\$10.95
1995	\$15.25
2000	\$17.25
2004	\$24.95

F bar graph	H line graph
G frequency table	J circle graph

21. If *d* represents how many dozens of eggs were ordered, which expression represents the number of eggs that were ordered?

A 12 <i>d</i>	C 12 ÷ d
B 12 + <i>d</i>	D d ÷ 12

22. What is the value of

2 ×	: (4	+	8)	+	30?	
-----	------	---	----	---	-----	--

F 46	H 50
G 36	J 54

23. 8,234 -2,736

A 5,498	C 6,412
B 5,628	D 11,060

24. What is the length of the figure?



	F0/111 B, C	onunuea	
25.	Ме	nu	30. Estimate the measure
	Chicken	\$15.99	of the angle.
	Spaghetti	\$12.99	F 30 degrees
	Salad	\$7.25	
	Fish	\$19.99	
V b 26. / F 27. F / E	Which costs more out less than the A chicken B spaghetti A hexagon has h 5 5 6 6 Find the perimete A 94.86 cm B 39 cm	e than the spaghetti fish? C salad D fish ow many sides? H 7 J 8 r of the figure shown.	31. What is the measure of the missing angle? A 90 degrees B 80 degrees C 100 degrees D 65 degrees 32. $\frac{4}{5} = \frac{?}{10}$ F 2 H 8 G 4 J 10
28. F U F G J	c 21.5 cm c 19.5 cm Find the circumfe Jse 3.14 for π . c 12.56 in. c 25.12 in. c 50.24 in. c 200.96 in.	9.3 cm 10.2 cm erence of the circle. 8 in.	33. What are the coordinates of point <i>B</i> A A A A A A A A
29. li c n £	f the community open from 1:15 p nany hours is the A 6 hr B 6 hr 15 min	swimming pool is .м. to 8:30 р.м. how e pool open? С 7 hr 15 min D 8 hr 15 min	A (1, 2) C (2, 4) B (3, 3) D (4, 2) 34. What is $\frac{7}{21}$ in simplest form? F $\frac{1}{3}$ H $\frac{1}{2}$ G $\frac{7}{21}$ D 3

CHAPTERCumulative TestImage: Chapter of the second second

35. What is $2\frac{3}{4}$ as an improper fraction?

c 4
$\frac{1}{23}$
D $\frac{8}{4}$

36. Which set of fractions is in order from least to greatest?

E	3 2 1	<u> </u>
h 10, 5, 2	10, 5, 2	n <u>2</u> , <u>5</u> , <u>10</u>
~	<u>2 3 1</u>	3 1 2
u	$\overline{5}, \overline{10}, \overline{2}$	$\frac{10}{10}, \frac{10}{2}, \frac{10}{5}$

37. Samantha bought 4 colored ribbons for \$12.00. What did each ribbon cost?

A \$2.00 **C** \$4.50

- **B** \$3.00 **D** \$48.00
- **38.** Use the spinner to find the probability of spinning R.

 $\frac{R}{Y O F}$

G $\frac{1}{4}$

F $\frac{1}{8}$

39. What is the area of the figure shown?

	0	
A 10 ft ²		
B 20 ft ²		4 ft
C 24 ft ²		
D 48 ft ²	6 ft	

Η

40. The track team bought 35 new warm-ups for training. The cost of each is \$38. They have \$1,500 to spend. How much money will they have left?

F	\$170	н	\$1,538
G	\$360	J	\$1,330

The bar graph shows a sixth-grade class's votes for their favorite sport. **Favorite Sports** 50 45 Number of Votes 40 35 30 25 20 15 10 5 Basketball Baseball 0 Tennis HOCKEY Soccet Sports **41.** How many sixth-graders voted? **A** 120 **C** 130 **B** 145 **D** 110 **42.** Which sport had 15 more votes than basketball? **F** Soccer **H** Baseball J Tennis **G** Hockey

43. A shoe store wants to sell 500 pairs of running shoes during their week-long sale. They sold 58 pairs Monday, 42 pairs Tuesday, 75 pairs Wednesday, and 59 pairs Thursday. How many more pairs must they sell this week to meet their goal?

Α	234 pairs	С	325 pairs
В	266 pairs	D	200 pairs

- **44.** David's exercise program includes 455 push-ups each week. How many push-ups does he average each day?
 - **F** 90 push-ups **H** 91 push-ups

G 65 push-ups **J** 60 push-ups

Name _

The Number Tool Box 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
20	F	G	Н	J
21	А	В	С	D
22	F	G	Н	J
23	А	В	С	D
24	F	G	Н	J

25	А	В	С	D
26	F	G	Н	J
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	А	В	С	D
34	F	G	Η	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	Α	В	С	D
44	F	G	Н	J

Name ____

The Number Tool Box 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	Α	В	С	D
16	F	G	Н	J
17	А	В	С	D
18	F	G	Н	J
19	А	В	С	D
20	F	G	Н	J
21	А	В	С	D
22	F	G	Н	J
23	А	В	С	D
24	F	G	Н	J

25	А	В	С	D
26	F	G	Н	J
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	А	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

The Number Tool Box Assessment

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

25		В	С	D
26	F		Н	J
27	А		С	D
28	F	G		J
29	А	В		D
30	F		Н	J
31	А		С	D
32	F	G		J
33	А	В		D
34		G	Н	J
35		В	С	D
36		G	Н	J
37	А		С	D
38	F		Н	J
39	А	В		D
40		G	Н	J
41	А		С	D
42		G	Н	J
43	А		С	D
44	F		Н	J

Chapter 1 Assessment 100%

> 16 94%

17

15 88%

14 82%

13 76%

12 71%

11 65%

10 59%

9 53%

47% 8

41% 7

35% 6

29% 5

Name _