

Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Battle Ship
Focus:	Coordinates

Materials:

White boards Crayolas

Socks

Vocabulary Notebooks Decks of cards

Opening

State the objective

Today we are going to practice using our math vocabulary and skills in working with fractions.

Gain prior knowledge by asking students the following questions

Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and s1uares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. In what ways is geometry useful in your day-to-day life?

Today we are going to use grid paper in our activity. Have you ever worked with grid paper? What do you know about determining coordinates on a grid?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?

How can you tell that you are on the right track for solving the problem?

Content (the "Meat")	
Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>
Jill's yard is 40 feet by 35 feet. If she purchases sod at \$5.00 per square feet, how much will the new lawn cost her?	During the lesson check in with students repeatedly.
	Check in about what is
Fact Practice Multiples	happening and what they are thinking.
 Multiplication facts are learned by recognizing the multiples of any given number. In this practice you will be determining the multiples of randomly generated numbers. You will need a chart and crayolas (150 chart). 1. Roll one or two dice (if you roll two add the numbers together to determine the factor in the fact practice). 2. Mark all multiples of the number and then pass off to the next person. 3. Player may mark the same number. 	Stop the class and focus on a student's key learning or understanding. Ask open- ended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.



Math Vo	It is important to review	
Word for Today: volume	academic math vocabulary	
Description: Te term volume refers to the spa	Complete the Vocabulary	
Create an entry in your Vecabulary Netebook f	notebook for each word.	
Vocabulary Notebook Sample:	When possible, have	
New Word	My Description	students experience the word
volume	the amount of space in a three dimensional object	right angle, multiple students acting out an equation). Vocabulary Notebooks can
Personal Connection	Drawing	composition book.
What is the volume of that box?	$y = \frac{108}{x^2}$	
Ac	Focus on having young	
Battle Ship This activity was worked on yesterday. Ask str game that is helpful. Have students share stra pairing today.	udents what they learned about playing the tegies. Ask students to work in a different	people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
Battle Ship		•
Graphing coordinates is an important learning determine where to place battleships by rolling Battle Ship Directions:		
1. Divide students into pairs. Give each play	yer a set of 4 dice and a piece of grid paper.	
2. Player rolls 2, 3 or 4 dice to determine the		
together comes up with 11, and the 4 th die		
11.	·····	
3. Player repeats step 1 until he/she has 5 b	attleships in play.	
5. Players take turns guessing the location of		
opponent says "MISS", if the coordinate g	uessed is correct, then the player says "HIT".	
Guesses must be made stating the x axis6. Winner is the player that sinks all of the o	and then the y axis. pponent's battleships.	



	Closing				
	Review				
Say:					
 Please recap what we did today. 					
 Did we achieve our objectives? 					
Debrief					
Three Whats					
Ask the following three what questions:					
What was your key learning for the day?					
What opportunities might you have to do this same thing in the "real world"?					
What advice would you give to a "new" studen	t getting ready to do this activity?				

Reflection (Confirm, Tweak, Aha!)

- 1. Ask students to think about what they did today in math.
- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)



Fact Practice—Multiples

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150



Battleship 4th – 5th

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11	/												
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1	/												
()	1	2	3	4	5	6	7	8	9	10	11	12



Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Battle Ship 2
Focus:	Coordinates

ocabulary Notebooks	Materials at end of the lesson plan
-sided dice; 12-sided dice	
ecks of cards	
/ (ocabulary Notebooks -sided dice; 12-sided dice ecks of cards

Opening

State the objective

Today we are going to practice using our math vocabulary and skills in working with fractions.

Gain prior knowledge by asking students the following questions

Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and s1uares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. In what ways is geometry useful in your day-to-day life?

Today we are going to use grid paper in our activity. Have you ever worked with grid paper? What do you know about determining coordinates on a grid?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? How can you tell that you are on the right track for solving the problem?

		Conten	t (the "Meat")	
		*Activity → Teachable Moment(s) <i>throughout</i>		
Loo 60	k at the chart below. ÷ X = Y	During the lesson check in with students repeatedly.		
	X 2	Y		Check in about what is happening and what they are thinking.
	3 4			Take advantage of any teachable moments.
	5 6 10			Stop the class and focus on a student's key learning or understanding. Ask open-
		ended questions to determine what the rest of the group is thinking.		
A Fa exa mer	act Family is 3 numb mple, the number 9, nbers:	lationship in multiplication and division. For articular relationship in math. This family has four	When possible, engage students in a "teach to learn" opportunity and have the	



9 X 4 = 36		student become the teacher.
$4 \times 9 = 36$ $36 \div 4 = 9$		
$36 \div 9 = 4$		
Students should roll 2 dice and create a Fact F		
the white board. Student should roll a total of 5		
Math Vo	cabulary	It is important to review
Word for Loday: perimeter	atown and a two dimensional above. To	often throughout the day.
find the perimeter you start and one spot go a	round the outside edge of the shape. To	Complete the Vocabulary
back to where you started. We can measure a	perimeter with a ruler or some other measuring	notebook for each word.
tool, conventional or non-conventional. You ca	n also add the length of each side of a shape	When possible, have
together to find the perimeter.		students experience the word
Create and entry in your Vocabulary Notebook	for the term "perimeter".	right angle, multiple students
New Word	My Description	acting out an equation).
	,, p	Vocabulary Notebooks can
perimeter	distance around an object	be made from ½ of a
		composition book.
Personal Connection	Drawing	
He will walk the perimeter of the yard with		
his dog.		
	▲	
Act	ivity	Focus on having young
Battle	e Ship	people "compete" in pairs or
determine where to place battleships by rolling	or students. In this activity, students will dice to identify the coordinates	small groups. Once a game
determine where to place battleships by rolling		in the "When Homework Is
Battle Ship		Complete" center.
Directions:		
1. Divide students into pairs. Give each play	er a set of 4 dice and a piece of grid paper.	
2. Player rolls 2, 3 or 4 dice to determine the	coordinates of each battleship and marks the	
point on the graph. For example, if the pla		
together comes up with 11, and the 4 ^m die		
3. Player repeats step 1 until he/she has 5 ba		
4. When both players have their boards mark		
5. Players take turns guessing the location o	f the battleship. If the player misses, his/her	
Guesses must be made stating the x axis	and then the v axis.	
6. Winner is the player that sinks all of the op	pponent's battleships.	



Closing Review Say: • Please recap what we did today. • Did we achieve our objectives? Debrief Three Whats Ask the following three what questions: What was your key learning for the day? What opportunities might you have to do this same thing in the "real world"? What advice would you give to a "new" student getting ready to do this activity? Reflection (Confirm, Tweak, Aha!) 1. Ask students to think about what they did today in math. 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)

- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them.



Battleship Lesson 9 4th - 5th

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10 /												
9 /												
8 /												
7 🗡												
6 /												
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3 - 1												
2 /												
1												
0	1	2	3	4	5	6	7	8	9	10	11	12



Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Attributes
Focus:	GeometryAttributes

Materials:	
White boards	Decks of cards
Crayolas	Vocabulary Notebooks
Socks	Attribute cards (at end of the lesson plan)

Opening

State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

Gain prior knowledge by asking students the following questions

What do you know about attributes? How is a single attribute related to a whole description of an item? When you are describing something, what are some of the easiest attributes to identify? Think about geometric shapes. What would be some obvious attributes of shapes? Why is understanding attributes important in math?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?

How can you tell that you are on the right track for solving the problem?

Content (the "Meat")			
	Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>	
Wental math is when you do a math problem in your head without pencil and paper. If you were to find the answer to 83 x 5 by using mental math, how will you do this in the easiest		During the lesson check in with students repeatedly.	
Fact Practice		Check in about what is happening and what they are thinking.	
1. 2.	Divide students into trios. Give each trio a deck of cards without face cards and jokers. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest.	Take advantage of any teachable moments.	
3.	On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead.	Stop the class and focus on a student's key learning or	
4.	The referee multiplies the two numbers together and states the answer.	understanding. Ask open-	
5.	Each player looks at the other person's exposed number and names his/her own number.	ended questions to determine what the rest of	
6.	Person who wins (accuracy and time), collects both cards.	the aroun is thinking	
/.	Play continues until all cards are gone.	When possible engage	
δ.	opportunity to be both a player and referee.	students in "teaching to learn".	



Math Voc Word for today: equilateral triangle Description: A triangle is a three sided figure lines forming the triangle meet.) These angles equilateral triangle, each angle is equal, so ea is usually the first picture of a triangle that we Create an entry in your notebook for the term: Vocabulary Notebook Sample:	It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation).		
New Word equilateral triangle	My Description all the sides and angles are equal	Vocabulary Notebooks can be made from ½ of a composition book.	
Personal Connection The musical instrument is an equilateral triangle.	Drawing		
Acti Attrik This game was played yesterday. Ask studen that is helpful. Have students share strategies not play in yesterday.	Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.		
 Attributes <u>Directions:</u> Divide students into trios. Give each trio a deck of Attribute Cards. Shuffle the cars and deal them one at a tit. When one of the player sees 3 cards with someone else's hand, the player calls, "T characteristic and picks up the three cards Play continues, dealing the cards one at a been picked up. Player with the most cards wins. 			



Closing
Review
Say:
Please recap what we did today.
• Did we achieve our objectives?
Debrief
Three Whats
Ask the following three what guestions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?
Reflection (Confirm, Tweak, Ana!)
1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one

- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)











Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Attributes 2
Focus:	Attributes

Materials:	
White boards	Attribute Cards (included in the plan)
Crayolas	Vocabulary Notebooks
Socks	Deck of cards

Opening

State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

Gain prior knowledge by asking students the following questions

What do you know about attributes? How is a single attribute related to a whole description of an item? When you are describing something, what are some of the easiest attributes to identify? Think about geometric shapes. What would be some obvious attributes of shapes? Why is understanding attributes important in math?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? How can you tell that you are on the right track for solving the problem?

Content (the "Meat")

Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>
John has 13 boxes of baseball cards. Each box has 250 cards. How many baseball cards does John have? Explain your answer.	During the lesson check in with students repeatedly.
 Fact Practice Multiplication War Divide students into pairs. Give each pair a deck of cards without face cards and jokers. Shuffle the deck and divide the cards evenly between the two players. On go, the players turn over the cards at the same time. Students multiply the 2 numbers that have been turned up. First person to give the answer either wins the cards because the answer is correct, or has to turn over 2 cards because he/she gave the wrong answer. At the end of round, students may reshuffle the pile of cards that they have. Play can continue until one player has all cards or time has called. 	Check in about what is happening and what they are thinking. Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask open- ended questions to determine what the rest of the group is thinking. When possible, engage students in "teaching to learn".



Math Ve Word for Today: acute angle Description: An angle is created when two angle is measured in degrees. For example, There are 90° in a right angle. The lines are "acute" describes an angle that is less than 9 are closer together. An acute angle looks so Create an entry in your Vocabulary Notebook Vocabulary Notebook Sample: New Word acute angle	It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can be made from ½ of a composition book.	
Personal Connection	Drawing	
The greater than sign is an acute angle.		
Activity Attributes An attribute is a characteristic or a trait. An attribute could be color, stripes, solids, spots, shapes, edges, corners and any other characteristic that identifies something. When we categorize something we look for shared characteristics or attributes. The purpose of this activity is to determine what attributes can categorize objects—in other words, what attributes do the objects have in common.		Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is" center.
 Attributes <u>Directions:</u> 1. Divide students into trios. 2. Give each trio a deck of Attribute Cards. 3. Shuffle the cars and deal them one at a time to each player, face up. 4. When one of the player sees 3 cards with a common attribute (even if the cards are in someone else's hand, the player calls, "Trio" and then names the common characteristic and picks up the three cards. 5. Play continues, dealing the cards one at a time, until all cards have been dealt and been picked up. 6. Player with the most cards wins. 		



Closing
Review
Say:
Please recap what we did today.
Did we achieve our objectives?
Debrief
Three Whats
Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" player getting ready to play this game so he/she could get all the blocks are completed.
Reflection (Confirm, Tweak, Aha!)

- 1. Ask students to think about what they did today in math.
- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)











Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	What's In A Shape?
Focus:	Geometry

Materials:	
White boards	Vocabulary Notebooks
Crayolas	Dice
Socks	What's In A Shape Worksheet (at end of lesson plan)

Opening

State the objective

Today we are going to practice using our math vocabulary and skills with fractions.

Gain prior knowledge by asking students the following questions

Geometric shapes come in all shapes and sizes. Name some of the more common shapes? There are two dimensional or flat shapes, and then there are three dimensional or shapes that have volume. For example, a triangle is a three-sided shape and a pyramid is a three dimensional shape that begins with a triangle? What other 3-dimensional shapes do you know?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? How can you tell that you are on the right track for solving the problem?

Content (the "Meat")	
Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>
weighs 2.4 pounds. How much do the bags weight together? How do you know?	During the lesson check in
Fact Practice	with students repeatedly.
 Multiplication Ladder 1. Give each student a white board (include marker or crayola). 2. Student should draw a ladder like the one below. 	Check in about what is happening and what they are thinking.
9	Take advantage of any teachable moments.
	Stop the class and focus on a student's key learning or understanding. Ask open- ended questions to determine what the rest of the group is thinking.
 1 3. Have student roll 2 dice, total the pips and then multiply that number times each of the numbers in the ladder, writing the total to the right of the number. 	When possible, engage students in a "teach to learn" opportunity and have the student become the teacher.



Math Vo	It is important to review	
Word for today: obtuse angle	academic math vocabulary	
Word for today: obtuse angle Description: an angle is created when two lines come together to create a point. If three angles are included in one shape, you have a triangle. In a triangle if you added the measurement of each angle, you would have 180°. An obtuse angle is an angle that has more than 90°. A right angle, which is shaped like an L, has 90° in it. An obtuse angle has more than 90°, and less than 180°. An obtuse angle looks like this:		often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can
New Word	My Description	be made from ½ of a
obtuse angle	more than a 90 degree angle	composition book.
Personal Connection	Drawing	
When I opened the door as wide as I could it formed an obtuse angle.	Obtuse angle	
Activity What's In A Shape? This activity was worked on yesterday. Ask students what they learned about playing the game that is helpful. Have students share strategies. Ask students to work in a different pairing today.		Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.
 What's In A Shape? <u>Directions:</u> Divide students into pairs. Give each pair a set of 6 shapes. Have students cut the shape apart. Give each pair a directions sheet. Follow the directions and complete each challenge. 		



Closing Review Say: • • Did we achieve our objectives? Debrief Three Whats Ask the following three what questions: What was your key learning for the day? What opportunities might you have to do this same thing in the "real world"? What advice would you give to a "new" student getting ready to do this activity? Reflection (Confirm, Tweak, Aha!) 1 Ack students to thick shout what they did teday is math

- 1. Ask students to think about what they did today in math.
- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)



What's In A Shape Lesson 3 4th-5th Grade

Study the different shapes that you have been given and cut out. You have an Equilateral Triangle (E), Diamond (D), Square (S), Rhombus (R), Hexagon (H), and Trapezoid (T).

These shapes have a relationship with one another and this is an exercise in which you will explore that relationship.

Solve the following pattern block equations. Write the letter the shape the equation makes in the blank.

3 x E = _____ 3 x R = _____

R + E = _____ 2 x 1 = _____

If the perimeter of the Equilateral Triangle (E) is 3 units, what is the perimeter of

R______T_____H_____

If the area of the Equilateral Triangle (E) is 1 square unit, what is the area of

R______T______H_____

Draw the following shapes by following the directions:

Use two different paper pattern: Make a shape with a perimeter of 8 units and an area of 8 square units.

Use three paper patterns. Make a shape with a perimeter of 7 units and an area of 5 square units.

Use five paper patterns. Make a shape with a perimeter of 6 units and an area of 6 square units.

Use three different paper patterns to make a shape with a perimeter of 11 and an area of 11 square units.

Just for fun, use the paper patterns to make a totally unique shape. Figure out the perimeter and the area.







Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	What's In A Shape? 2
Focus:	Geometry

Materials:	
White boards	Vocabulary Notebooks
Crayolas	dice
Socks	What's In A Shape worksheet at the end of the lesson plan

Opening

State the objective

Today we are going to practice using our math vocabulary and skills working with fractions.

Gain prior knowledge by asking students the following questions

Geometric shapes come in all shapes and sizes. Name some of the more common shapes? There are two dimensional or flat shapes, and then there are three dimensional or shapes that have volume. For example, a triangle is a three-sided shape and a pyramid is a three dimensional shape that begins with a triangle? What other 3-dimensional shapes do you know?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? How can you tell that you are on the right track for solving the problem?

Content (the "Meat")	
Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>
If Sally makes \$21.25 each week when she helps Mrs. Jones with her housework, how much money will Sally make in 8 weeks? How do you know?	During the lesson check in with students repeatedly.
Fact Practice Spokes on a Wheel 1. Divide students into pairs.	Check in about what is happening and what they are thinking.
 On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire). 	Take advantage of any teachable moments.
 Have students choose to put a 6, 7 or 8 in the center circle. Student rolls two dice and adds the pips (dots). 	Stop the class and focus on a student's key learning or
 Taking this total, student writes a math problem on one of the spokes (eg. 7 is in the circle and students rolls a 3 and 5 which totals 8. The spoke equation would look like 7 x 8 = 56. 	understanding. Ask open- ended questions to determine what the rest of the group is thinking.
6. Process continues until all spokes have an equation.	When possible, engage students in a "teach to learn" opportunity and have the



		student become the teacher.
Math Vocabulary Word for Today: isosceles triangle Description: A triangle is a three sided figure that has three angles that add up to 180°. In an isosceles triangle there are two sides that are of equal length and two angles that are the same. The third side and the third angle are not like the other two. An isosceles triangle looks like this: Students complete the Vocabulary Notebook. Vocabulary Notebook Sample: New Word My Description isosceles triangle two sides and two angles equal Personal Connection Drawing I you have an isosceles triangle and you know the value of the two angles that are equal, you can calculate the degrees in two sides and two angles equal		It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can be made from ½ of a composition book.
Act What's In Geometric shapes can take a variety of forms combined, you can look closely at patterns, fr an opportunity to look at several shapes, each to think about these shapes in relationship with What's In A Shape? Directions: 1. Divide students into pairs. 2. Give each pair a set of 6 shapes. 3. Have students cut the shape apart. 4. Give each pair a directions sheet. 5. Follow the directions and complete each	Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.	



Closing
Review
Say:
Please recap what we did today.
Did we achieve our objectives?
Debrief
Three Whats
Ask the following three what questions:
What was your key learning for the day?
What opportunities might you have to do this same thing in the "real world"?
What advice would you give to a "new" student getting ready to do this activity?
Reflection (Confirm, Tweak, Aha!)
1. Ask students to think about what they did today in math.
2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
3. Ask them to comment on what they did today that was like something they had done before except in one
particular way which was new to them. (Tweak)

4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)



What's In A Shape Lesson 3 4th-5th Grade

Study the different shapes that you have been given and cut out. You have an Equilateral Triangle (E), Diamond (D), Square (S), Rhombus (R), Hexagon (H), and Trapezoid (T).

These shapes have a relationship with one another and this is an exercise in which you will explore that relationship.

Solve the following pattern block equations. Write the letter the shape the equation makes in the blank.

3 x E = _____ 3 x R = _____

R + E = _____ 2 x 1 = ____

If the perimeter of the Equilateral Triangle (E) is 3 units, what is the perimeter of

R______T_____H_____

If the area of the Equilateral Triangle (E) is 1 square unit, what is the area of

R_____T____H____

Draw the following shapes by following the directions:

Use two different paper pattern: Make a shape with a perimeter of 8 units and an area of 8 square units.

Use three paper patterns. Make a shape with a perimeter of 7 units and an area of 5 square units.

Use five paper patterns. Make a shape with a perimeter of 6 units and an area of 6 square units.

Use three different paper patterns to make a shape with a perimeter of 11 and an area of 11 square units.

Just for fun, use the paper patterns to make a totally unique shape. Figure out the perimeter and the area.







Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Forward Ho
Focus:	Geometry

Materials:		
White boards	Vocabulary Notebooks	Materials from yesterday (included in plan)
Crayolas	two, 12-sided dice for each pair	
Socks	Product Hunt Work Sheet	

Opening

State the objective

Today we are going to practice using our math vocabulary and skills with geometry.

Gain prior knowledge by asking students the following questions

Combining geometric shapes in a variety of different ways allows new shapes to be formed. For example, if you put two triangles together at the base, you will get a diamond.



What other shapes could you form is you added different geometric shapes together?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?

How can you tell that you are on the right track for solving the problem?

Content (the "Meat")	
Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>
Find the product of 5.78 x 3.1. Explain, in a step by step manner, what you did to get the answer correct?	During the lesson check in with students repeatedly.
Fact Practice	Check in about what is happening and what they are thinking.
 Product Hunt Divide students into pairs. Each pair needs a Product Hunt sheet (attached to this lesson plans). Player rolls two, 12-sided dice. Player multiplies the two numbers. If the product is not yet covered, then player may cover the product. Next player repeats steps 1-3. Winner is determined by who has the most numbers covered. 	 Take advantage of any teachable moments. Stop the class and focus on a student's key learning or understanding. Ask openended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the



Math Vocabulary Word for Today: translation (slide) Description: Translating or sliding a geometric shape occurs when a shape is moved or slid		It is important to review academic math vocabulary often throughout the day.
new a new location without rotating it or flipping the shape. Here is an example:		Notebook for each word. When possible, have students experience the word (Ex. 4 students creating a
New Word translation	Scabulary Notebook Sample: New Word My Description translation To slide a shape from one place to another—same distance, same direction	
Personal Connection I will translate that picture to a new place on the page.	Drawing	
Activity Forward Ho! This activity was worked on yesterday. Ask stugame that is helpful. Have students share strate pairing today.	Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.	
Forward Ho! Basic shapes, squares, diamonds and triangles Working on this activity will strengthen students relationships.		
 Forward Ho! <u>Directions:</u> Divide students into pairs or trios. Give each group a game board, a deck of cards with only aces, 2s, 3,s 4s, and 5s, a game token, and one set of Tangram pieces for each student. Player draws a card and moves that many spaces on the game board. When he/she arrives at the space, he/she will see a shape. He/she will now make the shape on the space with the number of Tangram pieces that is indicated by the card drawn. For example: player one draws a 2 and moves to a square that has a diamond. He/she must then make a diamond using 2 Tangram pieces. If player can make the shape with the required number of pieces, he/she can stay on the space, if he/she can't, then he/she must go back to where he/she was. Winner is the first person to reach the finish line. Note: more than one player can be on a space at the same time. 		



Closing
Review
Say:
Please recap what we did today.
Did we achieve our objectives?
Debrief
Three Whats
Ask the following three what questions:
What was your key learning for the day?
What apportunities might you have to do this same thing in the "real world"?
what opportunities might you have to do this same thing in the real world?
What advice would you give to a "new" student getting ready to do this activity?
Reflection (Confirm, Tweak, Aha!)
1. Ask students to think about what they did today in math.

- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them.



Product Hunt

48	20	81	3	45	27
1	24	108	77	7	40
120	72	96	8	18	60
14	144	70	22	15	11
33	35	66	132	63	16
12	30	28	110	100	49
6	36	21	121	90	2
84	5	44	25	99	10
32	9	56	88	4	11
24	50	55	54	42	80

START HERE







Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Forward Ho 2
Focus:	Geometry

Materials:		
White boards	Vocabulary Notebooks	Tangrams (card stock cut apart on lines)
Crayolas	Cards	
Socks	Forward Ho materials at end of lesson plan	

Opening
State the objective
Today we are going to practice using our math vocabulary and skills with geometry.
Gain prior knowledge by asking students the following questions
Combining geometric shapes in a variety of different ways allows new shapes to be formed. For example, if you put two triangles together at the base, you will get a diamond.
What other shapes could you form is you added different geometric shapes together? What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? How can you tell that you are on the right track for solving the problem?

Content (the "Meat")					
Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>				
Jorge did the math problem below. When he did he got the following answer: 27.648. Is Jorge right? How do you know?	During the lesson check in with students repeatedly.				
4.32 x 6.4	Check in about what is happening and what they are thinking.				
	Take advantage of any teachable moments.				
 Fact Practice Target Divide students into trios. Each trio needs a deck of cards without face cards and jokers. Place the cards face up in a TicTac Toe Grid. Turn up a 10th card which will be to the side and becomes the target number (aces count as 1) 	Stop the class and focus on a student's key learning or understanding. Ask open- ended questions to determine what the rest of the group is thinking.				
 Each player makes an equation with some or all of the numbers in the grid to equal the target number. Students may add, subtract, multiply or divide. 	When possible, engage students in a "teach to learn" opportunity and have the				



 Each card may be used only one time in As the cards are being picked up, the pl target card is 10, then I could say 5 x 2 = After one player finishes his/her turn, the remaining deck. Player with the most cards at the end of 	student become the teacher.	
Math \	It is important to review	
Word for Today: scalene triangle Description: A triangle is a three-sided figur three equal sides and three equal angles. An that are equal. A scalene triangle has no side triangle looks like this: Students should complete the Vocabulary Not Vocabulary Notebook Sample: New Word Scalene triangle Personal Connection Have you seen any scalene triangles on the playground?	academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from ½ of a composition book.	
Α	ctivity	Focus on having young
For Basic shapes, squares, diamonds and triangl Working on this activity will strengthen studer relationships.	people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.	
 Forward Ho! <u>Directions:</u> 1. Divide students into pairs or trios. 2. Give each group a game board, a deck game token, and one set of Tangram pies 3. Player draws a card and moves that ma arrives at the space, he/she will see a si 4. He/she will now make the shape on the indicated by the card drawn. For example that has a diamond. He/she must then a signal set of the space of the set of the set		



5. If player can make the shape with the required number of pieces, he/she can stay on the	
space, if he/she can't, then he/she must go back to where he/she was.	
6. Winner is the first person to reach the finish line.	
Note: more than one player can be on a space at the same time.	

Closing

Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?

Debrief

Three Whats

Ask the following three what questions:

What was your key learning for the day?

What opportunities might you have to do this same thing in the "real world"?

What advice would you give to a "new" student getting ready to do this activity?

Reflection (Confirm, Tweak, Aha!)

- 1. Ask students to think about what they did today in math.
- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them.

START HERE







Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Flip, Slide, and Turn
Focus:	Geometry

Materials:	
White boards	Vocabulary Notebooks
Crayolas	decks of cards
Socks	Materials attached to the lesson plan—grid paper, shapes

Opening

State the objective

Today we are going to practice using our math vocabulary and skills in working with geometry.

Gain prior knowledge by asking students the following questions

Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and squares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. In what ways is geometry useful in your day-to-day life?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem? How can you tell that you are on the right track for solving the problem?

Content (the "Meat")					
Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>				
Look at the following shapes. How many lines of symmetry do each of these shapes have? Is there a pattern? If yes, what is it?	During the lesson check in with students repeatedly.				
$\bigwedge \Box \bigodot \bigtriangledown$	Check in about what is happening and what they are thinking.				
	Take advantage of any teachable moments.				
Fact Practice	Stop the class and focus on a				
Draw!	student's key learning or				
 Divide students into pairs and give each pair a deck of cards. Remove the face cards and jokers from the deck of cards. Shuffle the deck. 	understanding. Ask open- ended questions to determine what the rest of the group is thinking.				
4. Decide who will go first.	When possible, engage				
5. First player draws two cards.	students in a "teach to learn"				
6. Student multiplies the cards.	opportunity and have the				
7. Student writes his/her problem on the white board, writing a complete number sentence.	student become the teacher.				



8. Students take turns drawing and creating	problems.	
Math Vo Word for Today: reflection (flip) Description: Reflections are everywhere. We reflected in a lake. When things are reflected if you look at the mountain, that top of the mount lake, the mountain appears to be flipped and the can happen top to bottom, like with the mountain $\blacktriangleleft ighthardow $	It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation). Vocabulary Notebooks can be made from ½ of a	
New Word	My Description	composition book.
reflection		
Personal Connection		
I can see my reflection in the mirror.		
Ac	tivity	Focus on having young
Flip, Slid It is possible to move a geometric figure in thre You can flip a figure over a line. When you do You can slide a figure along straight lines and You can turn a figure around a point and this is	people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.	
Flip, Slide, and Turn <u>Directions:</u>		
 Divide students into pairs. Give each pair two pieces of graph paper Write the four questions on the board and Pair of students Cut out each of the shape piece—tracing the shape on the graph pa the direction, labeling the picture so you k Pair should create a design on the second 	and a set of four shapes. make a copy for each pair. es and then follows the directions with each per before the direction and then after following now if they flipped, slid, or turned the piece. d piece of graph paper, using flips, slides, and	

turns.

Closing							
Review							
Say:							
Please recap what we did today.							
Did we achieve our objectives?							
Debrief							
Three Whats							
Ask the following three what questions:							
What was your key learning for the day?							
What opportunities might you have to do this same thing in the "real world"?							
What advice would you give to a "new" student getting ready to do this activity?							

Reflection (Confirm, Tweak, Aha!)

- 1. Ask students to think about what they did today in math.
- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them.





Flip, Slide and Turn Lesson 7 4th-5th



You can slide a figure along straight lines. Another word for slide is translation.

You can turn the figure around a point. Another word of turn is rotation.

You can flip the figure over a line. Another word for flip is reflection.

When you slide, turn, or flip a figure, does its size change? Does its shape change? The original figure and the final figure are the same.

Select one of the shapes below and trace it on grid paper. Then demonstrate how you can slide, flip, or turn the design.





Grid Paper



Component:	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Flip, Slide, and Turn 2
Focus:	Geometry

Materials:	
White boards	Vocabulary Notebooks
Crayolas	Double 9 Dominoes
Socks	Simplest Form Cards and Answer Cards—own pdf file

Opening

State the objective

Today we are going to practice using our math vocabulary and skills with geometry.

Gain prior knowledge by asking students the following questions

Geometry allows us to study shapes. There is plane geometry that has to do with flat shapes like lines, circles, and s1uares that you can draw on a piece of paper. There is solid geometry that has to do with prisms, cubes, and pyramids. In what ways is geometry useful in your day-to-day life?

What are some strategies that you use when you are trying to figure out how to solve a mathematics problem?

How can you tell that you are on the right track for solving the problem?

Content (the "Meat")	
Problem of the Day	*Activity → Teachable Moment(s) <i>throughout</i>
Melanie is dividing 246 by 31. She thinks that the first number of her answer (the quotient) will be placed in the hundreds place. Is she correct? How do you know?	During the lesson check in with students repeatedly.
	Check in about what is
Fact Practice	happening and what they are
Spots and Dots	thinking.
There is a master of Double 9 Dominos attached to this lesson plan. You will need 1 full set for each pair of students in your class. It is recommended that you duplicate on card stock	Take advantage of any teachable moments.
and if possible, laminate for use again in the future. Players sit across from each other. Dominoes are between them, face (or spots) down. Each student draws a domino and writes the multiplication problem on their white board, multiplying the numbers represented by the spots Example: Domino drawn is	Stop the class and focus on a student's key learning or understanding. Ask open- ended questions to determine what the rest of the group is thinking. When possible, engage students in a "teach to learn" opportunity and have the
	student become the teacher.



Multiplication: $2 \times 3 = 6$						
Math Vo Word for Today: rotation (turn) Description: Rotation means to turn around a point on the shape stays the same. Every poin is not like a slide in which you just move someth something over or upside down. A rotation is to this: Create an entry for the word rotation in your Vo Vocabulary Notebook Sample: New Word rotation	It is important to review academic math vocabulary often throughout the day. Complete the Vocabulary notebook for each word. When possible, have students experience the word (Ex. 4 students creating a right angle, multiple students acting out an equation) Vocabulary Notebooks can be made from ½ of a composition book.					
Personal Connection My necklace clasp continues a rotation around my neck.	Drawing					
Activity Flip, Slide, and TurnFocus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.It is possible to move a geometric figure in three ways: You can flip a figure over a line. When you do this it is called a reflection. You can slide a figure along straight lines and this is called a rotation.Focus on having young people "compete" in pairs or small groups. Once a game is mastered you can utilize it in the "When Homework Is Complete" center.						
 Flip, Slide, and Turn Directions: Divide students into pairs. Give each pair two pieces of graph paper and a set of four shapes. Write the four questions on the board and make a copy for each pair. Pair of students Cut out each of the shapes and then follows the directions with each piece—tracing the shape on the graph paper before the direction and then after following the direction, labeling the picture so you know if they flipped, slid, or turned the piece. 						



5. Pair should create a design on the second piece of graph paper, using flips, slides, and turns.

Closing						
Closing						
Review						
Say:						
Please recap what we did today.						
Did we achieve our objectives?						
Debrief	Debrief					
Three Whats	Three Whats					
Ask the following three what questions:						
What was your key learning for the day?						
What opportunities might you have to do this same thing in the "real world"?						
What advice would you give to a "new" student getting ready	to do this activity?					
, <u>, , , , , , , , , , , , , , , , , , </u>	,					

Reflection (Confirm, Tweak, Aha!)

- 1. Ask students to think about what they did today in math.
- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them.



Double 9 Dominoes

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Flip, Slide and Turn Lesson 7 4th-5th



You can slide a figure along straight lines. Another word for slide is translation.

You can turn the figure around a point. Another word of turn is rotation.

You can flip the figure over a line. Another word for flip is reflection.

When you slide, turn, or flip a figure, does its size change? Does its shape change? The original figure and the final figure are the same.

Select one of the shapes below and trace it on grid paper. Then demonstrate how you can slide, flip, or turn the design.





Grid Paper



Component	Math
Grade Level:	4 th & 5 th Grades
Lesson Title:	Student Activity Choice
Focus:	Review

Materials:

Game Boards for games below

Opening

State the objective

Today we are going to have fun playing games that we learned this week.

Content (the "Meat")

Activity

Choice of 5 activities

Over the past 11 days students have played 5 different games. Give students an opportunity to play one of these games.

Battleship Attributes What's In A Shape? Forward Ho! Flip, Slide and Turn

> Closing Review

Say:

- Please recap what we did today.
- Did we achieve our objectives?

Reflection (Confirm, Tweak, Aha!)

- 1. Ask students to think about what they did today in math.
- 2. Ask them to comment on what they did today was something they already knew how to do. (Confirmation)
- 3. Ask them to comment on what they did today that was like something they had done before except in one particular way which was new to them. (Tweak)
- 4. Ask them to comment on something (if anything) they have learned today that was brand new to them. (Aha!)