| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Battle Ship |
| Focus: | Coordinates |

## Materials:

White boards
Vocabulary Notebooks
Crayolas Decks of cards
Socks

| Opening |
| :--- |
| $\quad$ 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

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?

## Fact Practice Multiples

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.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
Check in about what is happening and what they are thinking.
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 student become the teacher.

| Word for Today: volume |
| :--- |
| Description: Te term volume refers to the space inside a three-dimensional shape. It is |
| found by multiplying together height x length x width. |
| Create an entry in your Vocabulary Notebook for the word "volume". |
| Vocabulary Notebook Sample: |
| New Word My Description <br> volume the amount of space in a three dimensional <br> object  |
| What is the volume of that box? |

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 $1 / 2$ of a composition book.

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.


## 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 $4^{\text {th }}-5^{\text {th }}$


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Battle Ship 2 |
| Focus: | Coordinates |


| Materials: |  |  |
| :--- | :--- | :--- |
| White boards | Vocabulary Notebooks | Materials at end of the lesson plan |
| Crayolas | 6-sided dice; 12-sided dice |  |
| Socks | decks of cards |  |


| Opening |
| :--- |
| $\quad$ 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

Look at the chart below. Write in the value of $Y$ in the problem below for each of the $x$ values.
$60 \div x=y$

| $X$ | $Y$ |
| :---: | :---: |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 10 |  |

## Fact Practice

Fact Family
A Fact Family is 3 numbers which have a relationship in multiplication and division. For example, the number 9,4 , and 36 have a particular relationship in math. This family has four members:

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
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 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

| $9 \times 4=36$ <br> $4 \times 9=36$ <br> $36 \div 4=9$ <br> $36 \div 9=4$ |  |  |
| :--- | :---: | :---: |
| Students should roll 2 dice and create a Fact Family by writing the members of the family on |  |  |
| the white board. Student should roll a total of 5 times, creating 5 Fact Families |  |  |
| Math Vocabulary |  |  |
| Word for Today: perimeter |  |  |
| Description: The term perimeter means the distance around a two dimensional shape. To <br> find the perimeter, you start and one spot, go around the outside edge of the shape, coming <br> back to where you started. We can measure a perimeter with a ruler or some other measuring <br> tool, conventional or non-conventional. You can also add the length of each side of a shape <br> together to find the perimeter. <br> Create and entry in your Vocabulary Notebook for the term "perimeter". <br> Vocabulary Notebook Sample: |  |  |
| New Word  <br> Personal Connection <br> He will walk the perimeter of the yard with <br> his dog. My Description |  |  |

## Activity <br> Battle Ship

Graphing coordinates is an important learning for students. In this activity, students will determine where to place battleships by rolling dice to identify the coordinates.

## Battle Ship <br> Directions:

1. Divide students into pairs. Give each player 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 player rolls 4 dice and by adding 3 of them together comes up with 11 , and the $4^{\text {th }}$ die is a 3 , he/she could marks the battleship at 311.
3. Player repeats step 1 until he/she has 5 battleships in play.
4. When both players have their boards marked, the game is ready to continue.
5. Players take turns guessing the location of the battleship. If the player misses, his/her opponent says "MISS", if the coordinate guessed is correct, then the player says "HIT". Guesses must be made stating the $x$ axis and then the $y$ axis.
6. Winner is the player that sinks all of the opponent's battleships.
student become the teacher.

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 $1 / 2$ of a composition book.

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.


## 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 $94^{\text {th }}-5^{\text {th }}$

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| $3 \rightarrow$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | 1 | 2 | 3 | 4 |  | 5 | 6 | 7 | 8 | 9 | 10 | 10 | 111 | 12 |


| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Attributes |
| Focus: | Geometry--Attributes |

## 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 <br> Mental math is when you do a math problem in your head without pencil and paper. If you were to find the answer to $83 \times 5$ by using mental math, how will you do this in the easiest way? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Fore-header <br> 1. Divide students into trios. Give each trio a deck of cards without face cards and jokers. <br> 2. Shuffle the deck and give all of the cards to the referee who will be "judging" the contest. <br> 3. On go, players are each handed a card by the referee and WITHOUT looking, put the card face out on his/her forehead. <br> 4. The referee multiplies the two numbers together and states the answer. <br> 5. Each player looks at the other person's exposed number and names his/her own number. <br> 6. Person who wins (accuracy and time), collects both cards. <br> 7. Play continues until all cards are gone. <br> 8. Players can repeat play (if there is another time) with each other so each has an opportunity to be both a player and referee. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> 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. <br> When possible, engage students in "teaching to learn". |

## Math Vocabulary

## Word for today: equilateral triangle

Description: A triangle is a three sided figure. It has three angles (points at which the lines forming the triangle meet.) These angles will add up to $180^{\circ}$ in ALL triangles. In an equilateral triangle, each angle is equal, so each angle equals $60^{\circ}$. An equilateral triangle is usually the first picture of a triangle that we have. They look like this:


Create an entry in your notebook for the term: equilateral triangle.
Vocabulary Notebook Sample:

| New Word <br> equilateral triangle | My Description <br> all the sides and angles are equal |
| :--- | :--- |
| Personal Connection <br> The musical instrument is an equilateral <br> triangle. | Drawing |

Activity
Attributes
This game was played yesterday. Ask students what they learned about playing the game that is helpful. Have students share strategies. Ask students to play in a trio that they did not play in yesterday.

## Attributes

## Directions:

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.

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 $1 / 2$ of a composition book.

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!)

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| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Attributes 2 |
| Focus: | Attributes |

## Materials:

White boards
Crayolas
Socks

Attribute Cards (included in the plan)
Vocabulary Notebooks
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 <br> John has 13 boxes of baseball cards. Each box has 250 cards. How many baseball cards does John have? Explain your answer. | *Activity $\rightarrow$ Teachable Moment(s) throughout During the lesson check in with students repeatedly. |
| Fact Practice <br> Multiplication War <br> - Divide students into pairs. Give each pair a deck of cards without face cards and jokers. <br> - Shuffle the deck and divide the cards evenly between the two players. <br> - On go, the players turn over the cards at the same time. <br> - Students multiply the 2 numbers that have been turned up. <br> - 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. <br> - At the end of round, students may reshuffle the pile of cards that they have. <br> - Play can continue until one player has all cards or time has called. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> 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 "teaching to learn". |


| Math Vocabulary |  |  |
| :--- | :--- | :---: |
| Word for Today: acute angle |  |  |
| Description: An angle is created when two line segments come together in a point. An |  |  |
| angle is measured in degrees. For example, right angle looks like the capital letter L. |  |  |
| There are $90^{\circ}$ in a right angle. The lines are perpendicular to one another. The word |  |  |
| "acute" describes an angle that is less than $90^{\circ}$. Instead of being perpendicular, the lines |  |  |
| are closer together. An acute angle looks something like this: |  |  |
| Create an entry in your Vocabulary Notebook for the word probable. |  |  |
| Vocabulary Notebook Sample: | New Word My Description <br> an angle less than 90 degrees  <br> acute angle Drawing <br> The greater than sign is an acute angle.  <br> Personal Connection  |  |

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 $1 / 2$ of a composition book.

## 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.

## Attributes

## Directions:

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.

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.

## 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!)

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| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ 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 |
| :--- |
| $\quad$ 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
Lorna is purchasing bags of oranges. She has decided that she needs 9 bags. Each bag weighs 2.4 pounds. How much do the bags weight together? How do you know?

## Fact Practice

## Multiplication Ladder

1. Give each student a white board (include marker or crayola).
2. Student should draw a ladder like the one below.

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.

## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
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 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 student become the teacher.

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 $180^{\circ}$. An obtuse angle is an angle that has more than $90^{\circ}$. A right angle, which is shaped like an L , has $90^{\circ}$ in it. An obtuse angle has more than $90^{\circ}$, and less than $180^{\circ}$. An obtuse angle looks like this:


Vocabulary Notebook Sample:

| New Word <br> obtuse angle | My Description <br> more than a 90 degree angle |
| :--- | :--- |
| Personal Connection <br> When I opened the door as wide as I <br> could it formed an obtuse angle.$\quad$Drawing |  |

## Activity <br> 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.

## 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 challenge.

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 $1 / 2$ of a composition book.

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.


## 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 $34^{\text {th }}-5^{\text {th }}$ 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.
$3 \times E=$ $\qquad$ $3 \times R=$ $\qquad$
$\mathrm{R}+\mathrm{E}=$ $\qquad$ $2 \times 1=$ $\qquad$

If the perimeter of the Equilateral Triangle $(\mathrm{E})$ is 3 units, what is the perimeter of

R $\qquad$ T $\qquad$ H $\qquad$
If the area of the Equilateral Triangle ( E ) is 1 square unit, what is the area of

## R

$\qquad$ T $\qquad$ H $\qquad$
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.

## Consult 4 Kids Lesson Plans



| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | What's In A Shape? 2 |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
dice
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 <br> 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? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. |
| Fact Practice <br> Spokes on a Wheel <br> 1. Divide students into pairs. <br> 2. On a white board, student draws a small circle with 9 spokes coming out of it (should look like a bicycle tire). <br> 3. Have students choose to put a 6,7 or 8 in the center circle. <br> 4. Student rolls two dice and adds the pips (dots). <br> 5. 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 $7 \times 8=56$. <br> 6. Process continues until all spokes have an equation. | Check in about what is happening and what they are thinking. <br> Take advantage of any teachable moments. <br> 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. <br> When possible, engage students in a "teach to learn" opportunity and have the |


 | Wath Voc |
| :--- |
| Wescription: A triangle is a three sided figure |
| an isosceles triangle there are two sides that are |
| the same. The third side and the third angle ar |
| triangle looks like this: |

Students complete the Vocabulary Notebook.
Vocabulary Notebook Sample:

| New Word |  |
| :--- | :--- |
| isosceles triangle | My Description <br> two sides and two angles equal |
| Personal Connection | Drawing |
| you have an isosceles triangle and you <br> know the value of the two angles that are <br> equal, you can calculate the degrees in <br> the third angle. |  |

## Activity

What's In A Shape?
Geometric shapes can take a variety of forms. When those geometric shapes are combined, you can look closely at patterns, fractions, and other relationships. You will have an opportunity to look at several shapes, each labeled with a letter. You will be instructed to think about these shapes in relationship with one another.

## 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 challenge.
student become the teacher.

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 $1 / 2$ of a composition book.

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.

## Consult 4 Kids Lesson Plans



## 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 $34^{\text {th }}-5^{\text {th }}$ 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.
$3 \times E=$ $\qquad$ $3 \times R=$ $\qquad$
$\mathrm{R}+\mathrm{E}=$ $\qquad$ $2 \times 1=$ $\qquad$

If the perimeter of the Equilateral Triangle $(\mathrm{E})$ is 3 units, what is the perimeter of

## R

$\qquad$ T $\qquad$ H $\qquad$
If the area of the Equilateral Triangle ( E ) is 1 square unit, what is the area of

## R

$\qquad$ T $\qquad$ H $\qquad$
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: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Forward Ho |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks two, 12-sided dice for each pair Product Hunt Work Sheet

Materials from yesterday (included in 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 <br> Find the product of $5.78 \times 3.1$. Explain, in a step by step manner, what you did to get the answer correct? | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is |
| Fact Practice <br> Product Hunt <br> 1. Divide students into pairs. <br> 2. Each pair needs a Product Hunt sheet (attached to this lesson plans ). <br> 3. Player rolls two, 12 -sided dice. <br> 4. Player multiplies the two numbers. <br> 5. If the product is not yet covered, then player may cover the product. <br> 6. Next player repeats steps 1-3. <br> 7. Winner is determined by who has the most numbers covered. | happening and what they are thinking. <br> Take advantage of any teachable moments. <br> 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. <br> When possible, engage students in a "teach to learn" opportunity and have the student become the teacher. |


| Math Vocabulary |
| :--- |
| Word for Today: translation (slide) |
| Description: Translating or sliding a geometric shape occurs when a shape is moved or slid |
| new a new location without rotating it or flipping the shape. Here is an example: |
| Create an entry of the word "translation" in the vocabulary notebook. <br> Vocabulary Notebook Sample: <br> New Word <br> translation <br> Personal Connection Description <br> I will translate that picture to a new place on <br> the page. |

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 $1 / 2$ of a composition book.

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.


## 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.

Consult 4 Kids Lesson Plans
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



FINISH

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Forward Ho 2 |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks Cards
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 <br> Jorge did the math problem below. When he did he got the following answer: 27.648. Is Jorge right? How do you know? $\begin{array}{r} 4.32 \\ \times 6.4 \\ \hline \end{array}$ | *Activity $\rightarrow$ Teachable <br> Moment(s) throughout <br> During the lesson check in with students repeatedly. <br> Check in about what is happening and what they are thinking. <br> Take advantage of any |
| Fact Practice <br> Target <br> 1. Divide students into trios. <br> 2. Each trio needs a deck of cards without face cards and jokers. <br> 3. Place the cards face up in a TicTac Toe Grid. <br> 4. Turn up a $10^{\text {th }}$ card which will be to the side and becomes the target number (aces count as 1). <br> 5. 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. | 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. <br> When possible, engage students in a "teach to learn" opportunity and have the |

6. Each card may be used only one time in the equation.
7. As the cards are being picked up, the player must say the equation aloud-for example if the target card is 10 , then I could say $5 \times 2=10$, and pick up the 5 and the 2 .
8. After one player finishes his/her turn, then the cards taken are replaced by cards from the remaining deck.
9. Player with the most cards at the end of the game win.

## Math Vocabulary

## Word for Today: scalene triangle

Description: A triangle is a three-sided figure with three angles. An equilateral triangle has three equal sides and three equal angles. An isosceles triangle has two sides and two angles that are equal. A scalene triangle has no sides and no angles that are equal. A scalene triangle looks like this:


Students should complete the Vocabulary Notebook
Vocabulary Notebook Sample:

| New Word | My Description |
| :--- | :--- |
| Scalene triangle |  |
| A triangle with no equal sides or angles |  |

## Activity <br> Forward Ho!

Basic shapes, squares, diamonds and triangles can be made by combining Tangram pieces. Working on this activity will strengthen students' understanding of spatial and geometric relationships.

## Forward Ho!

## Directions:

1. Divide students into pairs or trios.
2. Give each group a game board, a deck of cards with only aces, $2 \mathrm{~s}, 3, \mathrm{~s} 4 \mathrm{~s}$, and 5 s , a game token, and one set of Tangram pieces for each student.
3. 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.
4. 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.
student become the teacher.

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 $1 / 2$ of a composition book.

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.
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



FINISH

| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Flip, Slide, and Turn |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
decks of cards
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") |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: |



## Activity

## Flip, Slide and Turn

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 translation.
You can turn a figure around a point and this is called a rotation.

## Flip, Slide, and Turn

## Directions:

1. Divide students into pairs.
2. Give each pair two pieces of graph paper and a set of four shapes.
3. Write the four questions on the board and make a copy for each pair.
4. 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

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 $1 / 20$ a composition book.

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.
turns.

## Closing <br> 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 $74^{\text {th }}$ - $5^{\text {th }}$


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: | $4^{\text {th }} \& 5^{\text {th }}$ Grades |
| Lesson Title: | Flip, Slide, and Turn 2 |
| Focus: | Geometry |

## Materials:

White boards
Crayolas
Socks

Vocabulary Notebooks
Double 9 Dominoes
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 |
| sluares 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

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?

## Fact Practice

## Spots and Dots

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 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


## *Activity $\rightarrow$ Teachable Moment(s) throughout

During the lesson check in with students repeatedly.
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 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 student become the teacher.

| Multiplication: $2 \times 3=6$ |  |
| :--- | :--- |
| Word for Today: rotation (turn) |  |
| Description: Rotation means to turn around a center. The distance from the center to any <br> point on the shape stays the same. Every point makes a circle around the center. A rotation <br> is not like a slide in which you just move something over. It is not like a flip when you turn <br> something over or upside down. A rotation is turning the shape. An example could look like <br> this: |  |
| Create an entry for the word rotation in your Vocabulary Notebook. <br> Vocabulary Notebook Sample: |  |
| New Word <br> Notation | My Description |
| My necklace clasp continues a rotation |  |
| around my neck. |  |

Activity<br>Flip, Slide, and Turn

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.

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 translation.
You can turn a figure around a point and this is called a rotation.

## Flip, Slide, and Turn

## Directions:

1. Divide students into pairs.
2. Give each pair two pieces of graph paper and a set of four shapes.
3. Write the four questions on the board and make a copy for each pair.
4. 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.

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 $1 / 2$ of a composition book.

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


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.

Consult 4 Kids Lesson Plans

## Double 9 Dominoes



Consult 4 Kids Lesson Plans


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Flip, Slide and Turn Lesson $74^{\text {th }} 5^{\text {th }}$


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

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| Component | Math |
| :--- | :--- |
| Grade Level: | $4^{\text {th }} \& 5^{\text {th }}$ 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!)
