Circles

Geometry Unit 5

Preview

I have included a voice recorded power point show that has automatic slide advancement. Please leave feedback if you find this helpful, and I will go back and add it to my other units.

I have also started adding detailed lesson plans to my units. Please leave feedback on if this addition is helpful to you!!

For Middle/High School Special Education

Geometry: Circles
Lesson Plan

Preparation

- Print out a vocabulary board for each student to use throughout unit
  - Laminate or place in page protector
- Book
  - Print out, laminate, and bind
  - OR your students can listen to the pre-recorded version
- Vocabulary cards
  - Print out a set of cards onto cardstock and laminate
  - Make one set for each student and also one for the teacher to use in I Spy games

Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment that best fits the learning level of your students
- Give the assessment to assess what your students may already know
- I cannot emphasize enough how important this step is. If you want to see growth, this preassessment is so important!!

Teaching Tips

1. *Color Coding*: this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
   a. For more info, read more here:
      https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/
   b. I also have a blog post on differentiating one activity 3 ways:
      https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/
2. *Make you own copies of the activities*: Every day I review the activity we did yesterday. For that reason:
   a. I often complete the activity myself and often laminated it for easy review that I could use year after year.
   b. My copies were also helpful as either a model for students who needed more support or as a way for more advanced students to self-check their work.

Lesson Plans

12 days

Quick Look

Day	Activity	Day	Activity	Day	Activity
1	• Book • Vocab cards activity • Scavenger hunt • Circle map	5	• Book • Vocab cards activity • Highlight worksheet • Diameter/radius worksheet	9	• Book • Vocab cards cut and paste • Practice drawing circles • Highlight worksheet
2	• Book • Vocab cards activity • Scavenger hunt • Sorting activity	6	• Book • Vocab cards activity • Highlight worksheet • Diameter/radius worksheet	10	• Book • Vocab cards cut and paste • Practice drawing circles • Highlight worksheet
3	• Book • Vocab cards activity • Highlight worksheet • Diameter/radius worksheet	7	• Book • Vocab cards activity • Practice drawing circles • Highlight worksheet • Diameter/radius worksheet	11	• Book • Vocab cards activity • Close worksheets
4	• Book • Vocab cards activity • Highlight worksheet • Diameter/radius worksheet	8	• Book • Vocab cards activity • Practice drawing circles • Highlight worksheet	12	• Assessment • Sudoku puzzles

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Day 1

| Activity	Notes	Materials
Read or listen to a recording of the book (15 minutes)	• Since this is the first time students are seeing the book, I focus a lot on the pictures o Ask lots of questions about what they might think the pictures mean or may relate to • Make connections between book and vocabulary board (have students find relevant symbols on their boards to go with a concept or photo on page.) • Go through the book twice, once just looking at the photos and a second time reading the story	• book • Vocabulary board
Vocabulary cards (5 minutes)	• This first day, I am just introducing and allowing the students to explore/look at the cards • Make connections between cards and vocabulary board (have students matching symbols on the board)	• Vocabulary cards • Vocabulary board
Scavenger Hunt (10 minutes)	• Have students look around the room or walk around the school looking for examples of various circles	
Circle map (10 minutes)	• Do the circle map • Choose the best version depending on the learning level of your students (see worksheet directions for more details) • Add color coding if needed • Students complete the worksheet • Make connections to the book as necessary	• Worksheet • Scissors • Glue

Sharing (10 minutes)	• Each student shares their finished worksheet with the group using the communication method of their choice
	• This repetition is so important. Students are hearing the relevant vocabulary when:
	  o Read the story
	  o Review the vocabulary cards and board
	  o Complete the circle map
		• Completed worksheets
		• Communication devices

Let's think of a circle as a hula hoop, as we talk about different parts and ways we can describe it.

An arc is just part of the circumference. It includes all the points on the circumference between 2 labeled points.
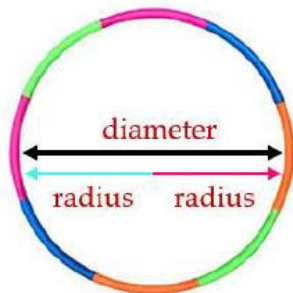
arc
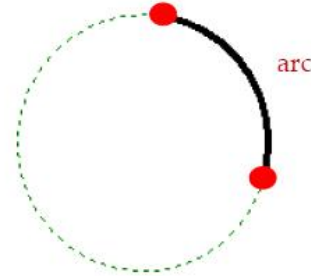
So, what if we want to talk about just part of a circle? Think about a pizza. What if we just wanted to talk about 1 slice of the pizza?
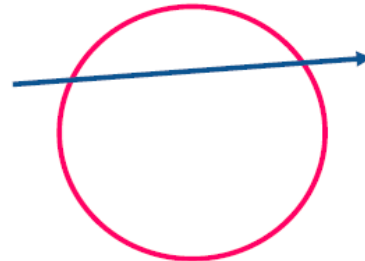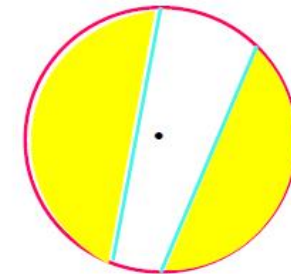
48 page book

Does this make sense? Look at the picture below. See how if you draw the radius 2 times, in opposite direction, is looks just like the diameter!

diameter
radius   radius

A secant line intersects the circle at 2 different places. It can intersect and keep going, like in the example below.

A segment is the area inside the circle that is created by a chord. Segments can be all different sizes.

circle
circumference
diameter
radius
arc
tangent
secant
chord
quadrant
semicircle
elipse
concentric
distance
center
compass
repeat that
yes
no
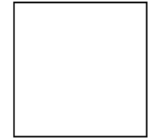I don't know
I need a break
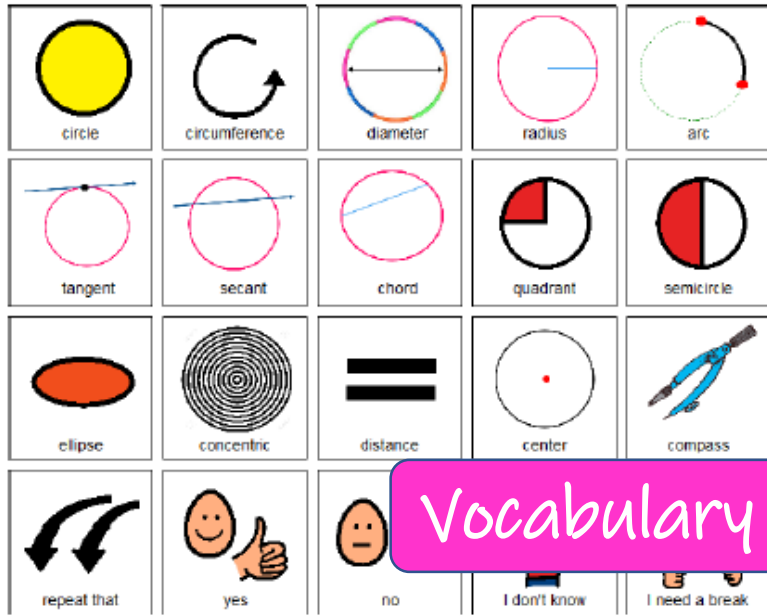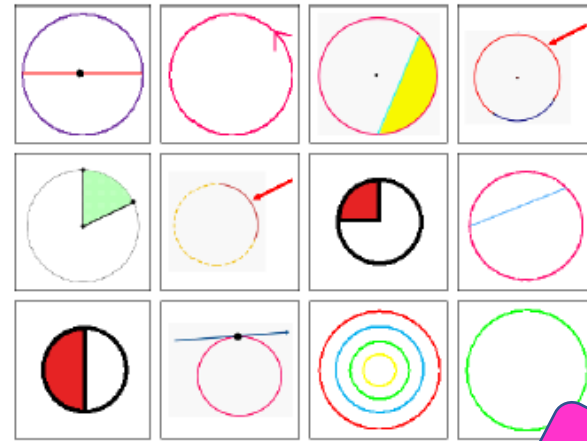
arc
All the points on the circumference of a circle between 2 labeled points.
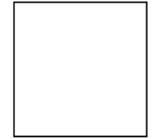
minor arc
An arc that is less than 180°.
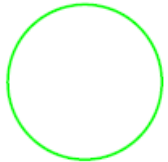
major arc
...that measures more than 180°.

tangent line
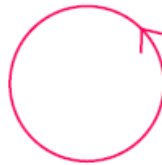A line intersects, or touches the circle, at only ONE point.

circle
Series of points that are all an equal distant from one single point, the center.
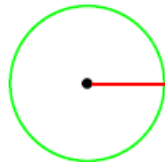
circumference
The distance around the circle.

diameter
The distance across the circle, going through the center.
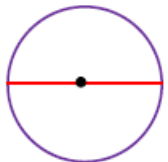
radius
The distance from the center of the circle to the outer edge.

|	
The distance around the circle.	A line that intersects the circ... different places.
"Pizza-slice" part of a circle. It goes from the center to the outer edge.	An arc that measures more... 180°.
All the points on the circumference of a circle between 2 labeled points.	Part of the circle created by a... It does NOT involve the c...
A sector that equals ½ of the circle.	The distance around the c...

semicircle

segment

ellipse

concentric circles

circle map

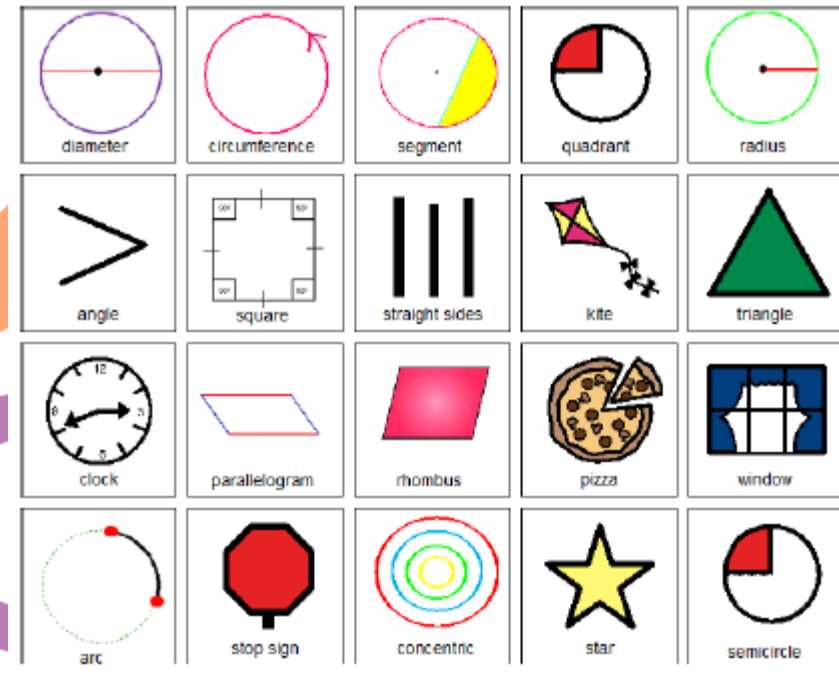Sorting activity
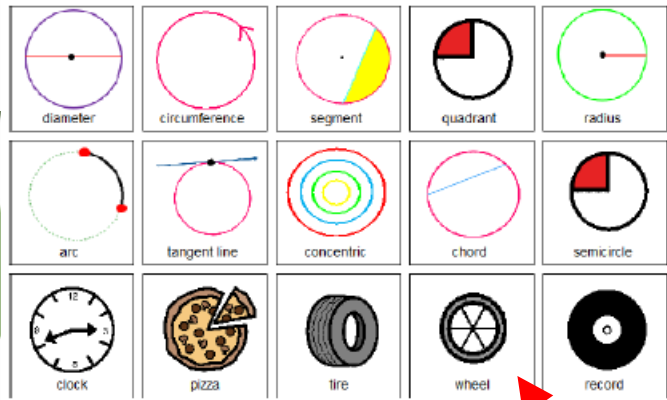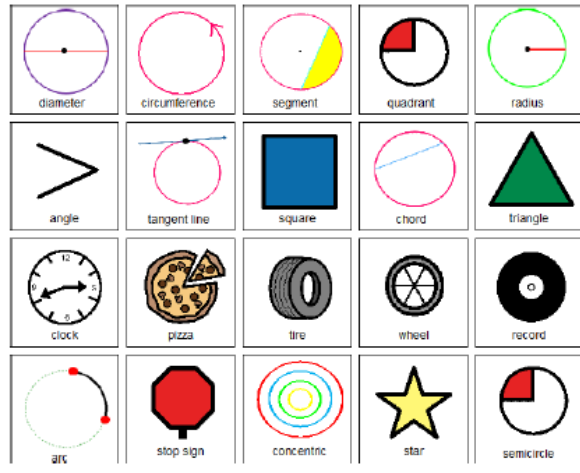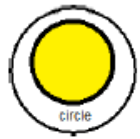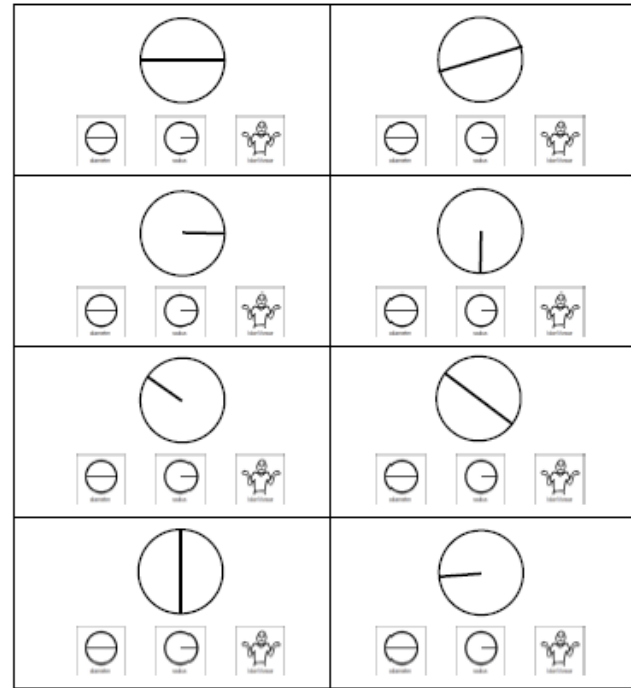
Errorless option

Highlight the radius of each circle.
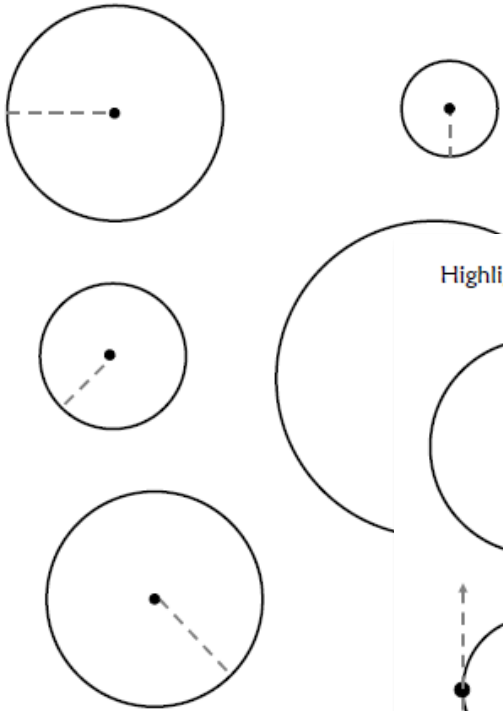
Highlight the tangent line of each circle.
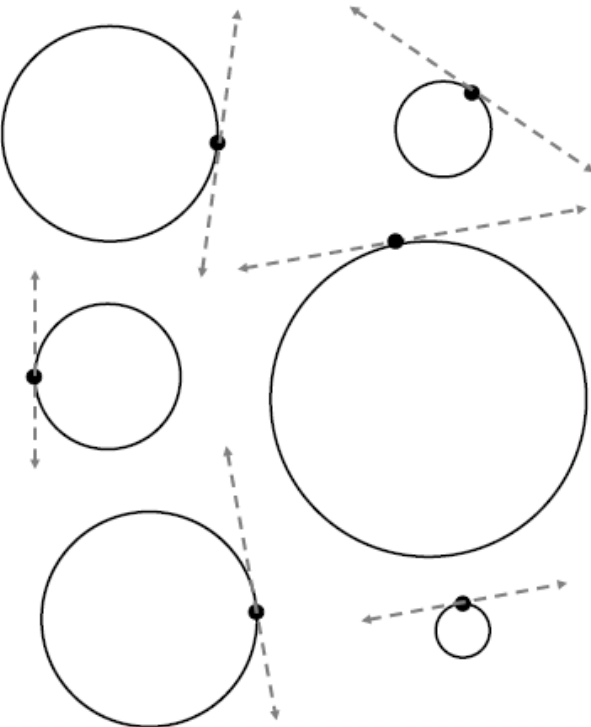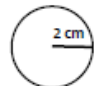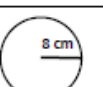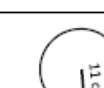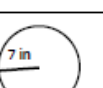
Look at each circle below and determine if it shows the radius or diameter.

Look at each circle below calculate the diameter when given the radius.

2 cm diameter = 4 cm	1 cm diameter =
4 cm diameter =	5 in diameter =
10 in diameter =	8 cm diameter =
11 cm diameter =	7 in diameter =

Circles

1. A circles is a series of point equal distance from the ____.

2. The circumference is the distance ____ the circle.

3. The radius is equal to ____ times the diameter.

4. An arc is part of the ____.

5. A tangent line touches the circle at ____ point

Circles

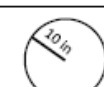6. A secant line touches the circle at ____ points.

7. A sector that includes half the circle is called a ____.

8. A segment is the area created by a ____.

____ looks like a squashed circle, but is NOT a circle.

____ concentric circles, all have the same ____.

Circles 1-5

around	center	1	circumference	2

Circles 6-10

center	semicircle	ellipse	2	chord

Circles

semicircle		quadrant	diameter	circle	
circle	concentric	semicircle	ellipse		
ellipse		concentric		semicircle	
concentric	quadrant		diameter		
semicircle	ellipse	quadrant	concentric		
diameter	circle	semicircle			

| circle | circle | circle | diameter | diameter |
| diameter | quadrant | quadrant | quadrant | semicircle |

Circles

		tangent	
tangent			
chord	tangent	circle	concentric
concentric	circle	tangent	

Assessments

1. A circle is a series of points all the same distance from the:

   edge   center   tangent

2. The diameter is the distance _____ the circle:

   around   across   over

3. The _____ is the distance half way across the

   radius   chord   ellipse

4. An _____ is part of the circumference betwee

   tangent   quadrant   arc

5. A line that touches a circle in only one spot is call

   chord   tangent   angle

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6. A sector that is ¼ of the circle is called a:

   semicircle   quadrant   whole

7. Which of the following shows a segment formed by a chord:

8. Which of the following shows a tangent line:

9. True or False. An ellipse is a circle.

   true   false   I don't know

10. Concentric circles are circles inside of circles that share then same:

   center   angle   sector

Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 3

radius   chord   ellipse

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1. A circle is a series of points all the same distance from the:
   - A. Edge
   - B. Center
   - C. tangent
2. The diameter is the distance _____ the circle:
   - A. Around
   - B. Across
   - C. over
3. The _____ is the distance half way across the circle.
   - A. Radius
   - B. Chord
   - C. ellipse
4. An _____ is part of the circumference between 2 points.
   - A. Tangent
   - B. Quadrant
   - C. arc
5. A line that touches a circle in only one spot is called a:
   - A. Chord
   - B. Tangent
   - C. Angle
6. A sector that is ¼ of the circle is called a:
   - A. Semicircle
   - B. Quadrant
   - C. Whole