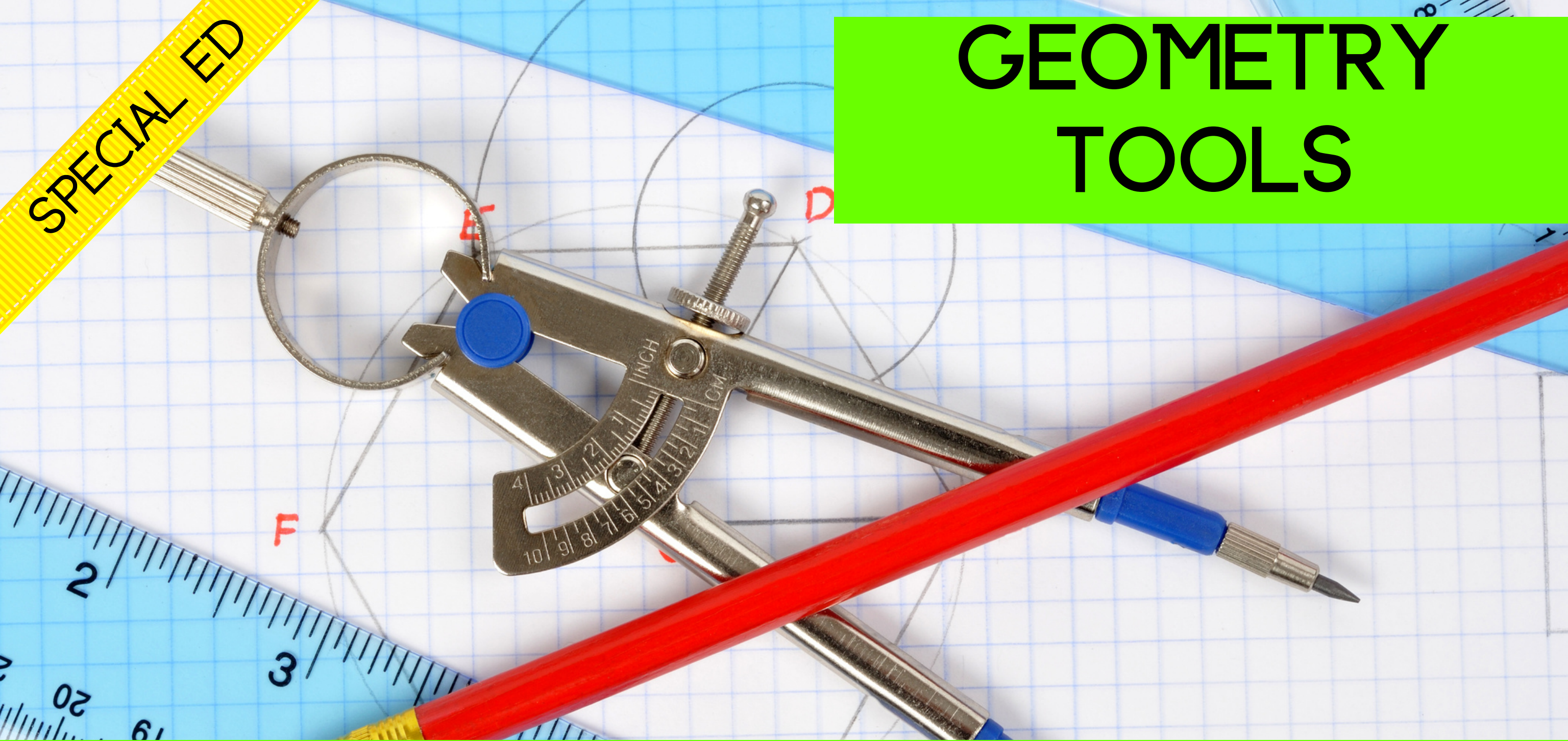


**SPECIAL ED**

# **GEOMETRY TOOLS**



**INCLUDES GOOGLE SLIDES**

*This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, has a very short attention span, and has a few foundational math skills. With some support, he is able to do this unit and enjoys the challenge. He is my tester!!*



# Geometry Tools Unit

By  
Christa Joy  
Special Needs for Special Kids



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Also included in this resource as separate files:

- Lesson plans
- Links and directions to digital activities
- PowerPoint (this is the book in the lesson plan)
- Voice recorded PowerPoint
- Activities in black and white

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This unit contains 17 days of material that is in both printable and digital formats. I have included a detailed lesson plan to help you make the most of everything in this unit including how to add some group activities.

It comes in 2 separate files. One in color and one in black and white.

# Geometry Tools 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
- Give the assessment to assess what your students
- I cannot emphasize enough how important this growth, this preassessment is so important!!

## Teaching Tips

1. **Color Coding:** this is a really easy way to do an activity. Outline or color in an empty box or the corresponding picture symbols the same color.
  - a. For more info, read more here: <https://specialneedsforspecialkids.org/differentiation/>
  - b. I also have a blog post on differentiation <https://specialneedsforspecialkids.org/3-ways-easily-and-effectively/>
2. **Make your own copies of the activities:** Even yesterday. For that reason:
  - a. I often complete the activity myself as that I could use year after year.
  - b. My copies were also helpful as either more support or as a way for more work.

## Quick Look

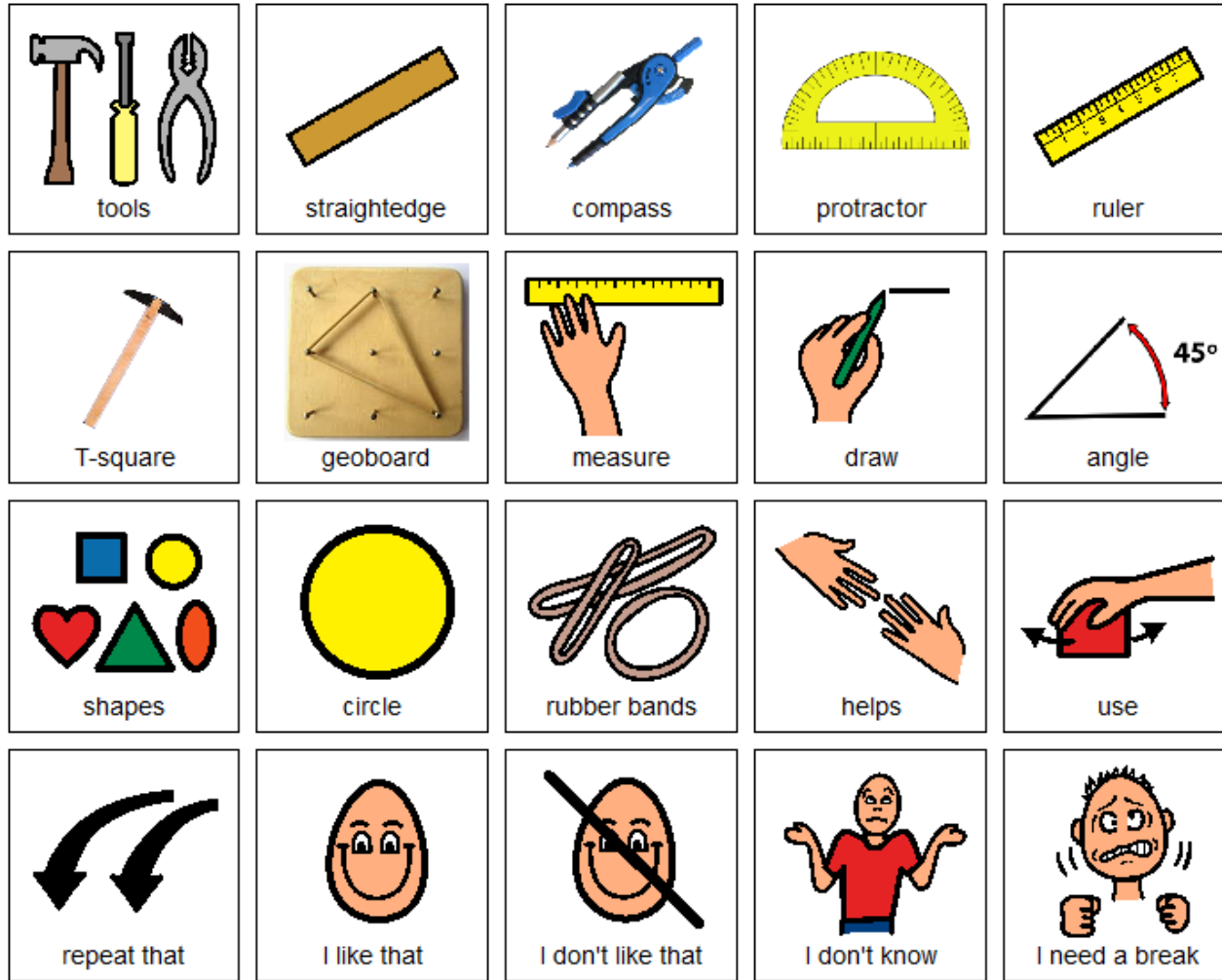
Day	Activity	Day	Activity	Day	Activity
1	<ul style="list-style-type: none"> <li>• Book</li> <li>• Vocab cards activity</li> <li>• Circle map</li> <li>• Practice using tools activity</li> </ul>	7	<ul style="list-style-type: none"> <li>• Book</li> <li>• Vocab cards activity</li> <li>• Sorting activity</li> </ul>	13	<ul style="list-style-type: none"> <li>• Book</li> <li>• Vocab cards activity</li> <li>• Close worksheet</li> </ul>
2	<ul style="list-style-type: none"> <li>• Book</li> <li>• Vocab cards activity</li> <li>• Circle map</li> <li>• Practice using tools activity</li> </ul>	8	<ul style="list-style-type: none"> <li>• Book</li> <li>• Vocab cards activity</li> <li>• Sorting activity</li> </ul>	14	<ul style="list-style-type: none"> <li>• Book</li> <li>• Vocab cards activity</li> <li>• Close worksheet</li> </ul>
	• Book		• Book Vocab cards activity Matching activity	15	• Book • Vocab cards activity • Close worksheet
			• Book Vocab cards activity Matching activity	16	• Book • Vocab cards activity • Close worksheet
			• Book Vocab cards cut and paste Close worksheet	17	• Book • Vocab cards cut and paste • Close worksheet
			• Book Vocab cards cut and paste Close worksheet		

## Day 2

Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	<ul style="list-style-type: none"> <li>• Read through the story, asking lots of questions</li> <li>• Continue to make connections between book and vocabulary board</li> </ul>	<ul style="list-style-type: none"> <li>• book</li> <li>• Vocabulary board</li> </ul>
Vocabulary cards I Spy Game (10 minutes)	<ul style="list-style-type: none"> <li>• I play this game, or variations of it the first few days                             <ul style="list-style-type: none"> <li>◦ Determine how many cards your students can handle in front of them. This can vary, some students may be able to have all the cards, so may only be able to handle a field of 3-5</li> </ul> </li> <li>• Since this is the first time playing this game, I make it easy. Hold up a card, and have students find the matching one and hold it up</li> <li>• Discuss relevant points on the card                             <ul style="list-style-type: none"> <li>◦ You can also play this game in this manner having them find the symbol on their vocabulary board</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Vocabulary cards (student set and teacher set)</li> <li>• Vocabulary board</li> </ul>
Circle map review (5 minutes)	<ul style="list-style-type: none"> <li>• Review the worksheets completed yesterday</li> </ul>	<ul style="list-style-type: none"> <li>• Worksheets completed yesterday</li> </ul>
Circle map (10 minutes)	<ul style="list-style-type: none"> <li>• Do one of the circle maps on one of the tools</li> <li>• Choose the best version depending on the learning level of your students (see worksheet directions for more details)</li> <li>• Add color coding if needed</li> <li>• Students complete the worksheet</li> <li>• Make connections to the book as necessary</li> </ul>	<ul style="list-style-type: none"> <li>• Worksheet</li> <li>• Scissors</li> <li>• Glue</li> </ul>
Practice Worksheet (10 minutes)	<ul style="list-style-type: none"> <li>• Do one of the worksheets to practice using one of the tools</li> <li>• Provide support as needed</li> <li>• Repeat these worksheets as often as you need to develop mastery</li> </ul>	<ul style="list-style-type: none"> <li>• Worksheet</li> <li>• Necessary tool</li> </ul>
Sharing (10 minutes)	<ul style="list-style-type: none"> <li>• Each student shares one of their finished worksheets with the group using the communication method of their choice</li> </ul>	<ul style="list-style-type: none"> <li>• Completed worksheets</li> <li>• Communication devices</li> </ul>

## The lesson plans contain:

- Overall tips for teaching students with significant needs
- A quick look at what you will do each day
- Detailed instructions on how that day's lesson should run



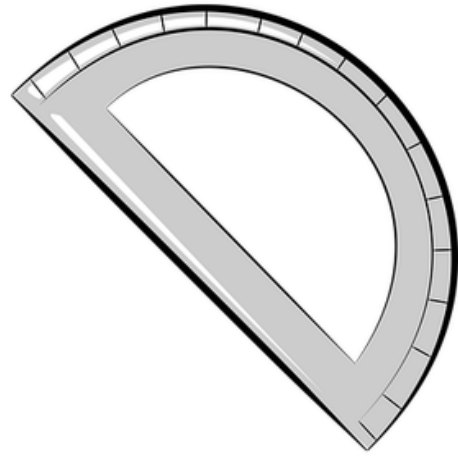
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This unit comes with a vocabulary board.

Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

Tips on how to use in the unit!!

The next tool is called a **protractor**, and it is used to measure **angles**.



©Christa Joy, SNSK

A compass is a tool that is shaped like a pair of scissors. One end has a sharp point, and the other end has a pencil.



©Christa Joy, SNSK

There is a 40-page book about some common tools used in geometry that students will use to complete the activities.

- pdf version
- voice-recorded PPT
- mp4 movie format

# Vocabulary

There are 8 vocabulary cards that come in color and black and white.

- Included are suggestions for group activities to do with these each day.
- There is also a cut-and-paste activity.

## straightedge

Tool with an edge that is straight and is used to draw a straight line.



## compass

"V" shaped tool with a point at one end and pencil on the other. It is used to draw arcs and circles.



## T-square

Tool shaped like a "T" that can be used to: draw a straight line, check for a 90 degree angle, and measure the length of a line segment.



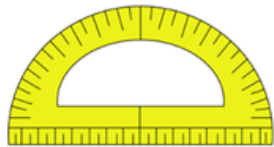
## geoboard

Tool with a solid base and evenly shaped pegs used with rubber bands to create various shapes.



## protractor

Tool shaped like a half moon used to measure angles.



## ruler

Straightedge with measurement marks to determine the length of a line segment.



## angle

Formed by two lines that share a common end point.



## vertex

The point where the two lines meet in an angle.



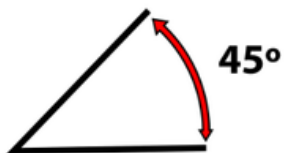
## T-square



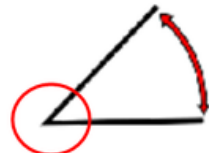
## geoboard



## angle



## vertex



"V" shaped tool with a point at one end and pencil on the other. It is used to draw arcs and circles.

Tool shaped like a "T" that can be used to: draw a straight line, check for a 90 degree angle, and measure the length of a line segment.

Straightedge with measurement marks to determine the length of a line segment.

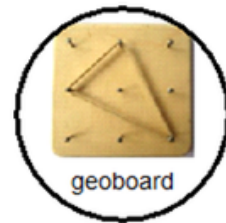
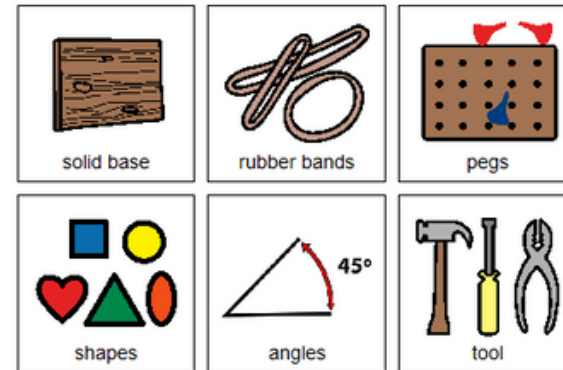
The point where the two lines meet in an angle.

Formed by two lines that share a common end point.

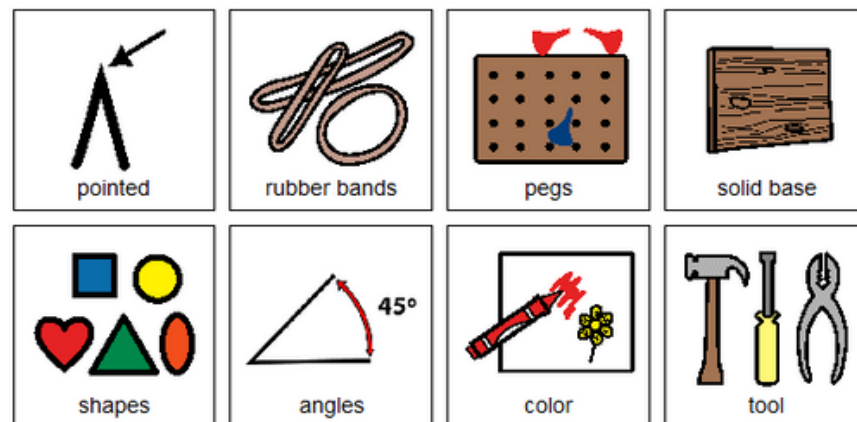
Tool with an edge that is straight and is used to draw a straight line.

# Circle maps

Cut apart pictures and place in circle map about a geoboard.



Cut apart pictures and place in circle map **ONLY IF** they are things that relate to a geoboard.



There is a circle map for each tool reviewing facts from the book.

Circle maps are a great way for students to see the concept at a glance.

There are 2 versions:

- One is errorless
- One has wrong answers mixed in students will have to set aside.



# Sorting

There are 2 sorting activities.

- tools used to measure an angle and ones used to draw a straight line
- one used to make shapes and ones used to measure a segment

This board is divided into two columns by a vertical line. The top-left cell contains an icon of a 45-degree angle with the text "measure an angle". The top-right cell contains an icon of a hand drawing a line with a pencil and the text "draw straight line". Below these are five cards: a yellow ruler labeled "ruler", a brown straightedge labeled "straightedge", a grey T-square labeled "T-square", and a yellow protractor labeled "protractor".

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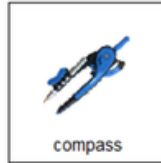
This board is divided into two columns by a vertical line. The top-left cell contains an icon of various shapes (square, circle, heart, triangle, oval) with the text "shapes". The top-right cell contains an icon of a line segment with arrows at both ends and the text "measure line segment". Below these are five cards: a yellow ruler labeled "ruler", a grey T-square labeled "T-square", a wooden geoboard labeled "geoboard", and a blue compass labeled "compass".

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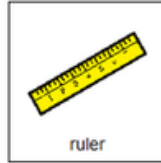
Draw a line to match



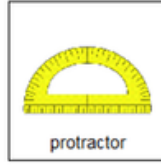
geoboard



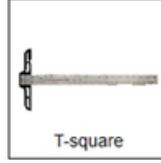
compass



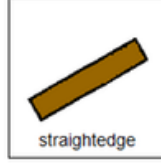
ruler



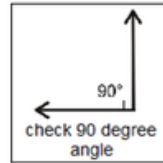
protractor



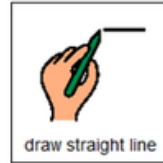
T-square



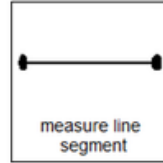
straightedge



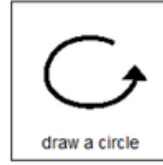
check 90 degree angle



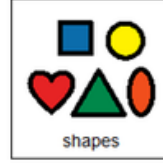
draw straight line



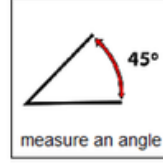
measure line segment



draw a circle



shapes



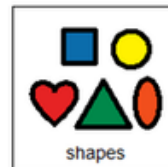
measure an angle

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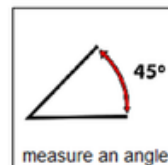
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# Which tool?

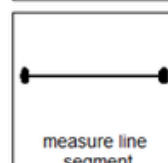
Draw a line to match



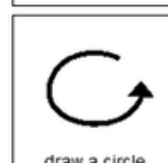
shapes



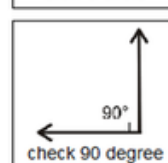
measure an angle



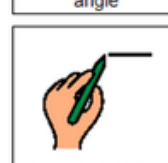
measure line segment



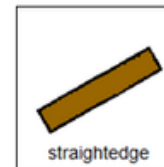
draw a circle



check 90 degree angle



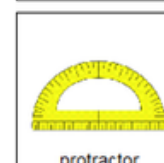
draw straight line



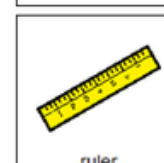
straightedge



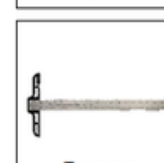
compass



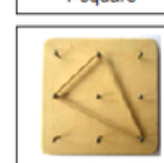
protractor



ruler



T-square



geoboard

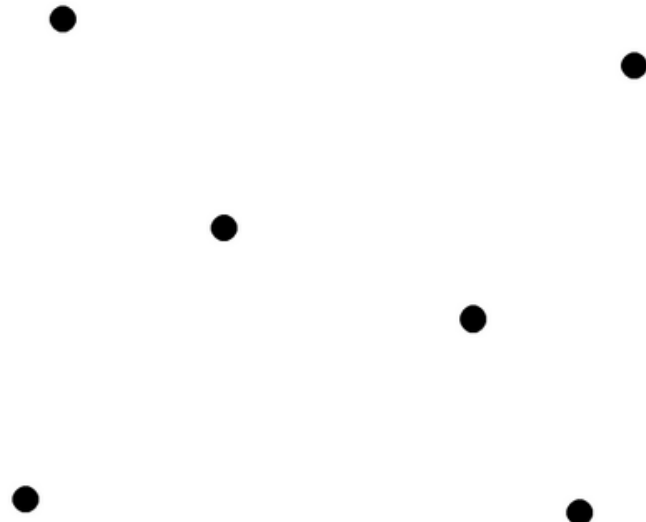
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Students will identify which tool they would use for a specific job. Differentiated version with the correct answers circled in dashed lines

## Compass

Place the point of the compass on each dot below. Hold the point steady and swing the pencil to draw a circle whatever size you choose.

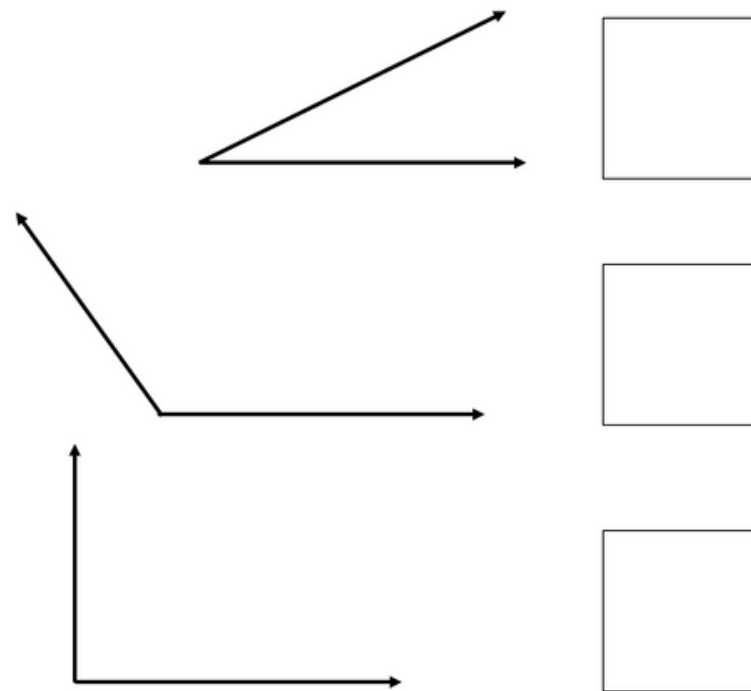


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## Practice using tools

## Protractor













Carefully place the protractor in the correct position and measure the angle. Write the answer in the box.









Students will match get practice using some of the common tools used in geometry.

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# Geometry Tools

 compass		 Geoboard			
			 compass	 protractor	 Geoboard
 T-square			 ruler	 straightedge	
	 ruler	 Compass			
 protractor					
	 T-square				

# Geometry Tools

		 geoboard	
	 straightedge	 protractor	
			
	 straightedge		

Place the following images in the empty squares on the previous page, completing the sudoku puzzle.

 compass	 compass	 protractor	 protractor	 protractor
 ruler	 ruler	 ruler	 T-square	 T-square
 T-square	 straightedge	 straightedge	 straightedge	 straightedge
 geoboard	 geoboard	 geoboard	 geoboard	

There is a Sudoku puzzle in this unit as well. This is a great way to work with the new vocabulary!!

There are 2 versions plus answer keys.

## Straightedge



1. A straight edge helps you to draw a

2. At least one edge is perfectly

3. It does  need to have measurement marks.

4. A  is a common tool that is often used as straightedge.

5. One other thing you could use is a



## Protractor



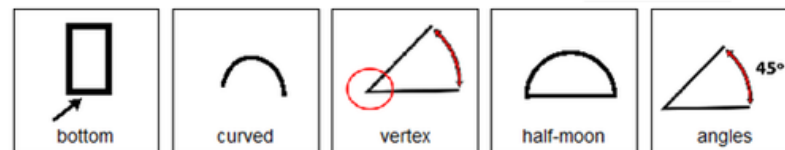
1. A protractor is shaped like a

2. It is used to measure

3. Place the  edge along one of the lines.

4. Make sure the  is on the center mark.

5. You read the angle where the line crosses the  edge.



## Quiz

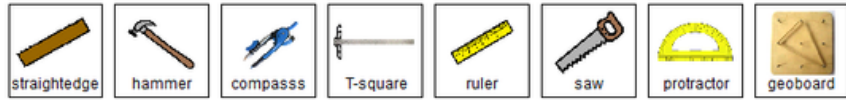
Close worksheets are a great informal assessment. This unit has one worksheet for each tool.

Answer key included.

Version 1

Version 2

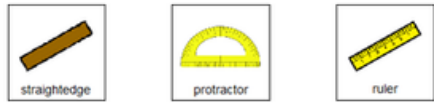
1. Circle all the tools used in geometry:



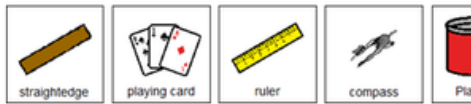
2. This tool is used to draw circles and arcs:



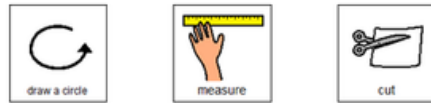
3. This tool is used to measure an angle:



4. Circle all the things that can be used as a straight edge.



5. A ruler is a straightedge that can also:



- Circle all the tools used in geometry:
 

A. Straightedge	E. Ruler
B. Hammer	F. Saw
C. Compass	G. Protractor
D. T-square	H. geoboard
- This tool is used to draw circles and arcs:
 

A. Ruler
B. Compass
C. T-square
- This tool is used to measure an angle:
 

A. Straightedge
B. Protractor
C. ruler
- Circle all the things that can be used as a straight edge.
 

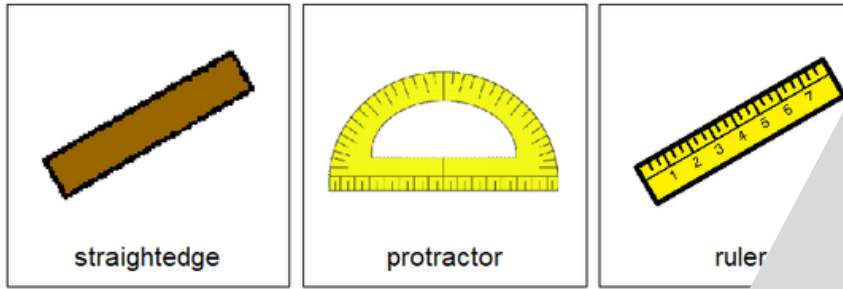
A. Straightedge	D. Compass
B. Playing cards	E. Play-do
C. Ruler	F. T-square
- A ruler is a straightedge that can also:
 

A. Draw a circle
B. Measure
C. Cut
- Use these with a geoboard to make different shapes.
 

A. Rubber bands
B. Tape
C. Paper clips

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

Q 3



Q 4



Version 3

# Assessment

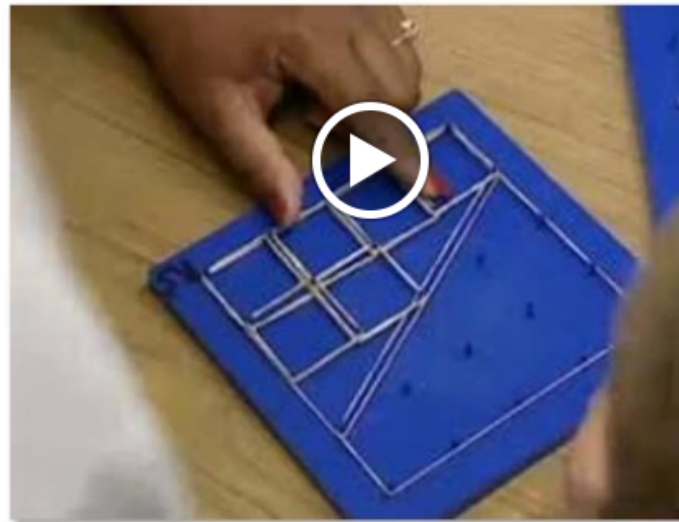
FINALLY the assessment!! There are 3 versions.

- 10 questions with 3 picture choices for each question
- cut out the answer choices and glue them on index cards
- traditional multiple choice

Answer key included.

## Digital Activities

Geoboards can also help you calculate the perimeter or area of a shape as well as explore the various angles.



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Watch the movie on Geometry Tools.

This unit also has digital activities. There is a movie version of the book students can listen to read aloud.



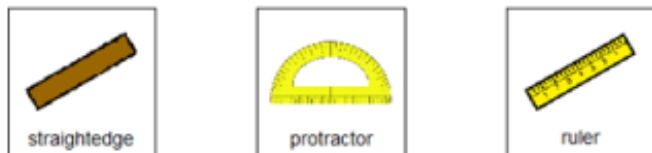
1. Circle all the tools used in geometry:



2. This tool is used to draw circles and arcs:



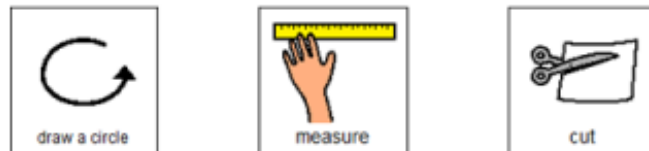
3. This tool is used to measure an angle.



4. Circle all the things that can be used as a straight edge.



5. A ruler is a straightedge that can also:



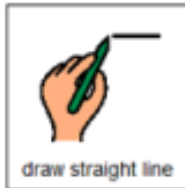
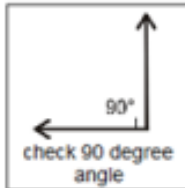
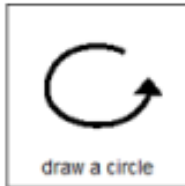
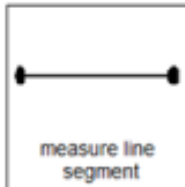
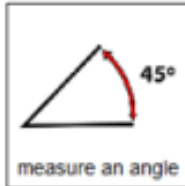
Circle the correct answer.



The digital activities have students mainly click and drag their answers. There is some typing involved in the set without differentiation.



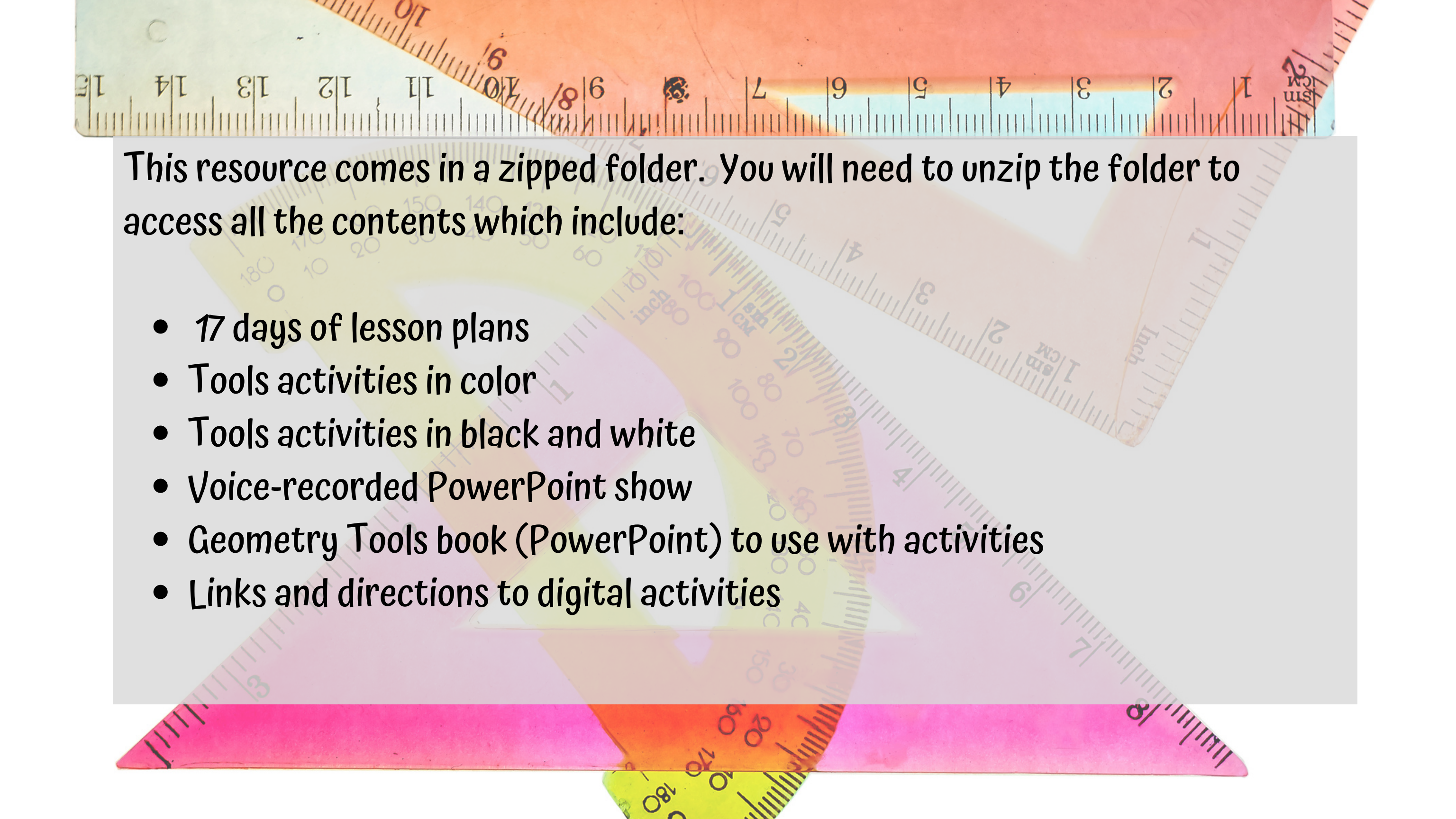




Match the tool to complete each job.



The second set of slides is differentiated using color. There is no typing in this set of slides.

The background of the slide features several overlapping, semi-transparent rulers and a protractor. The rulers are in various colors: orange, yellow, pink, and purple. They are marked with both centimeters and inches. A protractor is also visible, showing degree markings. The overall aesthetic is bright and educational.

**This resource comes in a zipped folder. You will need to unzip the folder to access all the contents which include:**

- **17 days of lesson plans**
- **Tools activities in color**
- **Tools activities in black and white**
- **Voice-recorded PowerPoint show**
- **Geometry Tools book (PowerPoint) to use with activities**
- **Links and directions to digital activities**

Save money by getting this unit as part of the  
Geometry Bundle

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