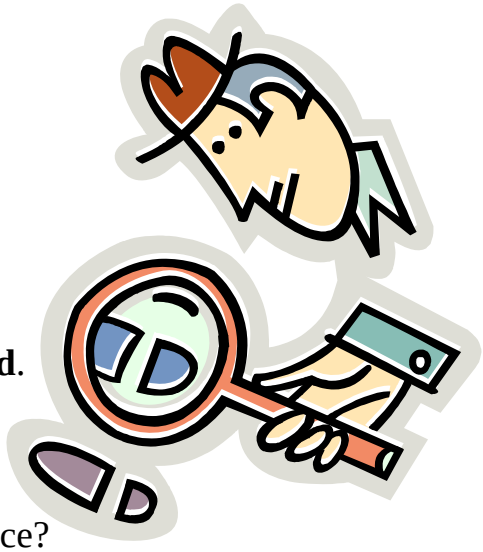
Sketchpad Skills Investigation



For detailed instructions see Technology Tutorial T²

1. Open a blank sketch in **Geometer's Sketchpad**.

2. Create some random points. What do you notice?

3. Select some points. Deselect them. How did you do this?

4. Label some points. What happens when you use the **Label Tool**? Why do you think this happens?

5. Make some circles. How can you deselect the last circle?

1. Construct some segments, lines and rays. How do they differ from each other? Why?

2. Label some of the segments, lines and rays you have created.

3. Use the box feature of the **Selection** tool to quickly select some of your items. What happened?

4. Use the **Selection Tool** to clear all objects from this page.

5. Click on the **File** menu and read the options. Slide the cursor across the menu bar and read the other options. What do you notice about some of the option choices?

6. Draw a segment and use the **Measurement** menu to measure it. Did you encounter any problems? If so, what were they?

   a. Did you measure a distance or a length? How could you have measured the other?

   b. What is the difference between distance and length and how Geometer's Sketchpad interprets this?

   c. Create a line and measure it. Create a ray and measure it. What did you discover?

7. Draw an angle and use the **Measurement** menu to measure it. Did you encounter any problems? If so, what were they?

   a. What was required in order for you to be able to measure your angle?

8. Click on one side of your angle and adjust the size of your angle. What happens?

9. Construct a circle and use the **Measurement** menu to explore the various measurement options. What measurements can be made?

10. Adjust the size of your circle by clicking on the control point on the circumference and dragging. What happens?

11. Draw a triangle and use the **Measurement** menu to explore the various measurement options. What measurements can be made?

    a. Can you measure the perimeter? Is there another way?

    b. How can you measure the area? Is there another way?

12. Construct the interior of your triangle. What measurement options are now available?

13. Change the size of your triangle. What happens to the measurements?

14. Draw a right triangle. Try to move it. Does it stay a right triangle? Why or why not?

15. Construct a 30-60-90 triangle.

16. Explore moving your triangle by clicking on various segments and angles. Which objects allow the triangle to stay the same size? Why?

    a. Which parts of the triangle allow it to adjust size? Why?

    b. Will this triangle always stay a 30-60-90 degree triangle no matter how big or small it gets? How do you know?

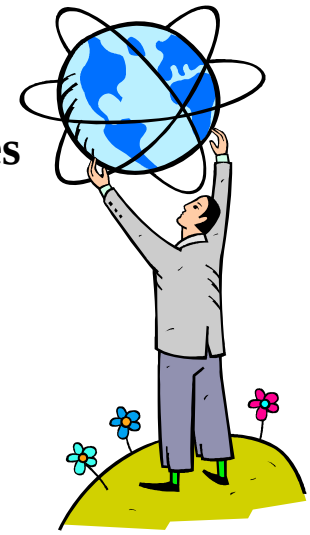
17. Create a Hide/Show button to hide your extra construction pieces.

18. Reflect your triangle. What happens?

19. How can you continue with this to make a tessellation? Try it.

    a. Did you encounter any challenges? If so, what were they and how did you overcome them?

20. What other shapes appear in your tessellation?



Explore the World with Geometric Properties

- Open a new sketch in Geometer's Sketchpad.

- Search the Internet for pictures or take digital photos that would demonstrate the following geometric properties: parallel lines, tangent to a circle, similar figures, congruent figures, central angle of a circle. *Challenge:* Find other geometric concepts represented in the world.

- Import your pictures into Geometer's Sketchpad, one picture per page.

- Use the Geometer's Sketchpad tools to construct and prove the geometric properties represented in your picture. Use a Text Box to show the URL where your picture was found along with any additional information that would be helpful for other participants viewing your construction.

- Report your findings to the rest of the participants via the method suggested by the facilitator.

Geometric Properties and Sketchpad Skills
Intentional Use of Data

TEKS			
Question(s) to Pose to Students	Math		
	Tech		
Cognitive Rigor		Knowledge	
		Understanding	
		Application	
		Analysis	
		Evaluation	
		Creation	
Data Source(s)		Real-Time	
		Archival	
		Categorical	
		Numerical	
Setting		Computer Lab	
		Mini-Lab	
		One Computer	
		Graphing Calculator	
		Measurement Based Data	
Bridge to the Classroom			