

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

### Lit Surface vs. Angle Lab

When light shines directly at a surface, the surface area of light is small, but the intensity is bright. When light shows less directly (indirectly), the surface area of the light is larger, but the intensity is not as bright. Seasons are caused because sometimes parts of the Earth receive more direct light from the Sun and some parts receive indirect light.

How does the angle that a light hits a surface affect the amount of surface area that is light?

IV: (2 points) \_\_\_\_\_

DV: (2 points) \_\_\_\_\_

Hypothesis: (3 points) \_\_\_\_\_

**Materials:**

- 1 flashlight
- 6 pieces of graph paper
- 1 pencil
- 1 angle guide

**Procedure:**

1. Use the angle guide to shine the flashlight at the graph paper at an angle of 90°. *(With your group, you must decide how far above the graph paper the flashlight will be and keep that constant.)*
2. Draw an outline of the area lit by the flashlight. *(With your group, you must decide which part of the light you will trace and keep that constant.)*
3. Count the number of lit squares. *(With your group, you must decide if you'll only count full squares or how you will count partial squares and keep that constant.)*
4. Use the angle guide to shine the flashlight at the graph paper at an angle of 60°.
5. Repeat steps #2-3.
6. Use the angle guide to shine the flashlight at the graph paper at an angle of 30°.
7. Repeat steps #2-3.
8. Repeat steps #1-7 for a second trial.

**Observations: (4 points)**

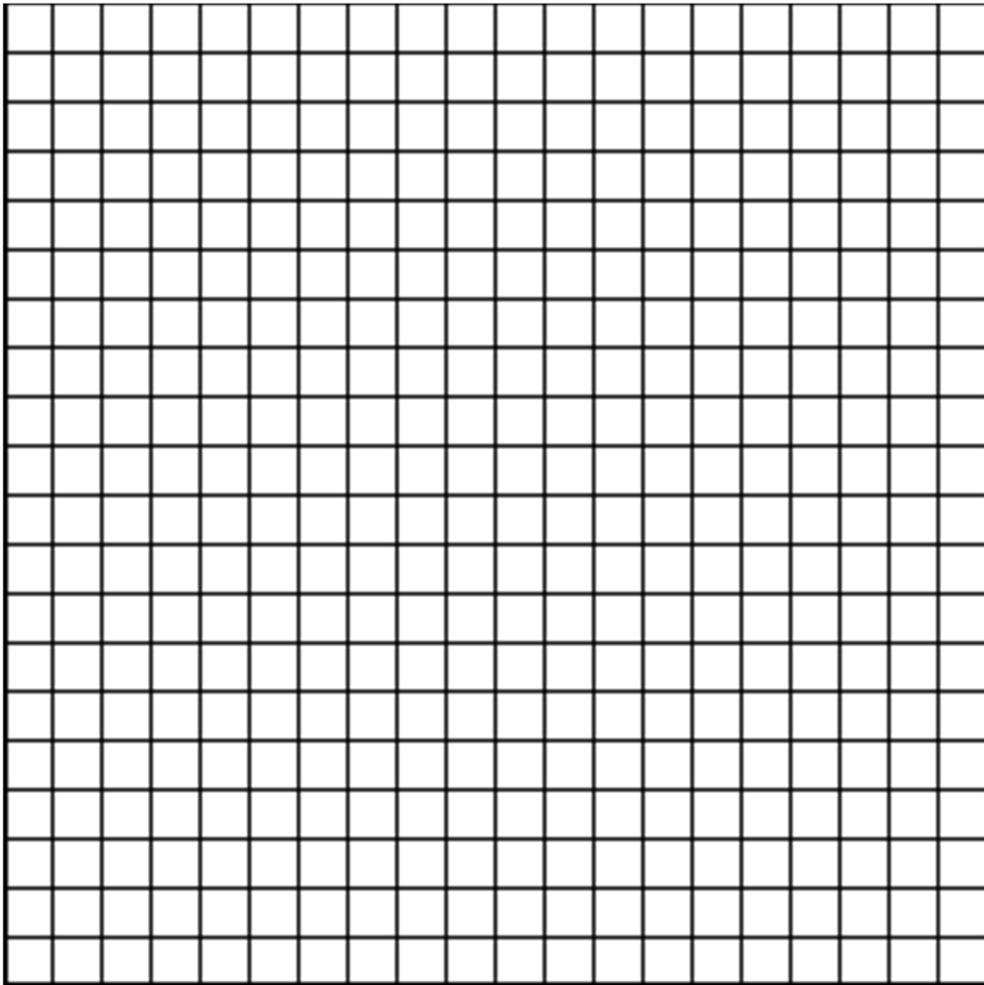
Angle	Number of lit squares		
	Trial 1	Trial 2	Average

What type of graph will you make? (1 point) \_\_\_\_\_

Why? (2 points) \_\_\_\_\_

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Make a complete graph of the data (10 points):



Data Analysis:

What trends do you notice? (2 points) \_\_\_\_\_

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Please attach conclusion on another sheet of paper. (15 points)