**Student Worksheet: Drawn to a flame**

**Directions**: Answer the first set of questions as instructed by your teacher before reading the article. Then, read the online *Science News* article “[Insects flocking to artificial lights may not know which way is up](https://www.sciencenews.org/article/insects-artificial-light-moth-direction-pollution)” and answer the remaining questions as directed by your teacher.

**Before Reading**1. What do you observe about insect behavior at night when a light is turned on? What is a possible reason for this behavior? In one sentence, provide a possible theory.

2. Imagine two moths flying around a lamp at night. Sketch a picture of the moths and lamp. Include in your sketch the orientation of the moths relative to the lamp. In other words, are they facing toward the light, away from it or one in each direction?

3. Watch the video embedded in the *Science News* article. What do you observe about the orientation of the moths’ bodies to the light bulb? Was your original prediction from question 2 correct? What could this behavior tell you about the effects of artificial light on the moths? Explain.

**During Reading**

1. What does new data suggest about why certain insects appear “captivated” by light?

2. Describe one of the previous hypotheses regarding the behavior of flying insects around a nighttime light source.

3. Describe how insects naturally orient themselves relative to a light source according to this new study.

4. What advantage would this orientation provide to an insect flying in sunlight?

5. What is an entomologist? Give an example of one from the article and explain how your example fits the definition.

6. List two types of equipment used in this study.

7. Surprising scientific findings often lead to more questions. What is one question that scientists now have as a result of the findings in this article?

**After Reading**1. How important is it for a flying insect to gauge their location relative to the ground, such as how high they're flying or whether they are facing upward or downward? Is accuracy important, somewhat important, or unnecessary? Explain your answer.

2. **This study found that the light affected fruit flies less strongly than moths and dragonflies. Read through this article and find a potential reason for this difference. Explain your theory, being sure to describe how this reason could contribute to differences in light sensitivity.**