

## 7.4.2 Assessment A

**Standards: 7.4.2:** *I can present information that shows how specific adaptations and structures will both make both reproduction and the survival of offspring more successful.*

**Task 1:** After evaluating the research materials provided, communicate an explanation, by writing a claim that is supported with evidence, as to how the behaviors of this organism improve his individual chances of passing on his genes to the next generation.

<http://www.natureworldnews.com/articles/4596/20131024/giving-gifts-male-spiders-increase-odds-successful-reproduction-video.htm>

**Task 2:** After evaluating the research materials provided, communicate an explanation, by writing a claim that is supported with evidence, as to how the structures of this organism help it to reproduce successfully.

(<http://www.bbc.com/earth/story/20150202-three-ways-orchids-trick-insects>)

**Task 3:** Based on the following information, identify which of the two organisms would be more successful in reproducing and create an explanation for your thinking.

- Two flowers of the same species rely on moths, which are active at night, to pollinate them. One flower puts out a scent at maximum levels late in the evening and throughout the night. One flower puts out a scent at maximum levels in the early morning.

**Task 4:** Given the following information, which organism would be more likely to survive long enough to reproduce? Communicate your thoughts by writing an explanation.

- Two male polar bears live in the arctic. One bear has the typical white fur, while the other has slightly tan-tinted fur.

## Adaptations for Successful Reproduction SAMPLE ANSWERS SHEET

Standards: 7.4.2

*I can present information that shows how specific adaptations and structures will make an organism more likely to survive and reproduce.*

### **Task 1**

After evaluating the research materials provided, communicate an explanation, by writing a claim that is supported with evidence, as to how the behaviors of this organism improve his individual chances of passing on his genes to the next generation.

<http://www.natureworldnews.com/articles/4596/20131024/giving-gifts-male-spiders-increase-odds-successful-reproduction-video.htm>

Male nursery web spiders offer a gift to their potential mate. This helps the male spider be successful in reproducing by distracting the female long enough for the male to share more sperm and thus increase his chance of having offspring. As the article says, "the male spider will begin to mate with her while she unwraps and eats the gift." The process of unwrapping and eating the gift takes time, and time for a male spider is needed for more sperm to be transferred. Additionally, the presented gift may be more than a mere distraction. The article states: "The female presumably prefers sperm from the gift bearer because it shows that he is resourceful and good at hunting and catching food." Resourcefulness means her offspring would have a higher chance of survival and further reproductive success. Both of these traits helps the male spider be more successful in passing on his genes to the next generation.

### **Task 2**

After evaluating the research materials provided, communicate an explanation, by writing a claim that is supported with evidence, as to how the structures of this organism help it to reproduce successfully.

(<http://www.bbc.com/earth/story/20150202-three-ways-orchids-trick-insects>)

Various species of orchids have different mechanisms of increasing their chances of reproducing successfully by mimicking insects scents and physical features. These strategies result in the orchids being pollinated by the very insects they mimic. In the article provided, it says, "Attracted from far away by the orchid's female-mimicking smell, the male gnat lands on the flower and attempts to copulate with the labellum." As this is done, the gnat ends up pollinating the flower. Therefore, the flower is successful in reproducing.

### **Task 3**

Based on the following information, identify which of the two organisms would be more successful in reproducing and create an explanation for your thinking.

- Two flowers of the same species rely on moths, which are active at night, to pollinate them. One flower puts out a scent at maximum levels late in the evening and throughout the night. One flower puts out a scent at maximum levels in the early morning.

The flower that puts out a scent at maximum levels late in the evening and throughout the night would be more successful at reproducing. This is because moths are active in the evening and throughout the night. That means there would be more time for pollination to occur.

### **Task 4**

Given the following information, which organism would be more likely to survive long enough to reproduce? Communicate your thoughts by writing an explanation.

- Two male polar bears live in the arctic. One bear has the typical white fur, while the other has slightly tan-tinted fur.

The polar bear with white fur will be more likely to survive long enough to reproduce. This is because the arctic environment is comprised of snow, which is white. Even a tan-tinted bear would stand out against white, making it more difficult for that bear to sneak up on prey. This bear would most likely not be able to live long enough to reproduce.

Conversely, the white-fur bear would be better able to stay camouflaged and sneak up on its prey, thus being able to eat and survive long enough to reproduce.