

Close Reading and Text Dependent Questions in Science Environment (Insects – Grade 2)

The text selection, *Environment*, is found in *FOSS Science Stories, Insects*, pgs. 36-41.



Look in the Student Learning Outcome (SLO) Documents for guidance on when this should be taught. These can be found on the BPS Science Department's website: <http://bpsscience.weebly.com/> You will find the Student Learning Outcomes documents organized there by grade level.

Environment

The adult mealworm is called a darkling beetle. You can tell it is an insect. It has a head with antennae. It has a thorax with six legs. And it has an abdomen. All darkling beetles are the same. Or are they?



If you look closely, you might see that some darkling beetles are a little different. Some are smaller. Most are black, but some are brown or tan.

Darkling beetles inherit most of their characteristics from their parents. Darkling beetles get their size and color from their parents. They get their head, antennae, thorax, and six legs from their parents.



Some darkling beetle characteristics are caused by the environment. Things can happen to change how a beetle looks.

If a beetle gets into a fight, it might lose a piece of wing cover. It could even lose a leg. The beetle looks different.

If the beetle becomes a parent, what will its offspring look like? Will they have broken wing covers and five legs? No. Changes like these are caused by the environment. They are not passed on to offspring.





Look at these trees. Why are they this shape?



These trees live in a very windy environment. The environment has shaped the trees.

What if a seed from a wind-shaped tree were planted in a place with no wind? The seed would grow into a tree that looks like this.



Acorns are the seeds of oak trees. Every year an oak tree grows acorns. Some years, the tree has hundreds of acorns. Other years, it has only a few acorns. What causes this difference?

Environment causes this difference. The tree grows lots of acorns when the environment is good. A good environment is warm. A good environment has plenty of water. It has lots of sunshine, too.

The tree grows few acorns when the environment is bad. A bad environment is too cold or too dry.

You can plant an acorn from a tree with lots of acorns. It will grow into an oak tree. Will it make lots of acorns every year? No. The new oak tree will make lots of acorns only when the environment is good. When the environment is bad, the tree will make only a few acorns.



Environment (Insects – Grade 2)

Student Questions

1. Read the first paragraph. What evidence from the text informs you that the darkling beetle is an insect? List the structures that make a darkling beetle an insect.

2. Looking at paragraph three of the article, what characteristics do darkling beetles inherit from their parents?

3. Give an example of how the environment can change how a beetle looks.

4. Your teacher will give you a list of darkling beetle characteristics. Sort the darkling beetle characteristics into the T-chart below.

Inherited	Environmental

5. What is an example from the text of how the environment affects trees?

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Sample Answers

- 1. Read the first paragraph. What evidence from the text informs you that the darkling beetle is an insect? List the structures that make a darkling beetle an insect.**

The darkling beetle is an insect because it has a head with antennae, a thorax, six legs, and an abdomen.

- 2. Looking at paragraph three of the article, what characteristics do darkling beetles inherit from their parents?**

Darkling beetles get their size and color, head, antennae, thorax, and six legs from their parents.

- 3. Give an example of how the environment can change how a beetle looks.**

Examples of how the environment can change how a beetle looks include losing a piece of wing cover or missing a leg from fighting.

4. Characteristics T-Chart

(Task-based activity - completed in pairs) Each pair of students receives a T-chart and slips of paper with darkling beetle characteristics taken from pages 37 and 38 of the text. Students sort the darkling beetle characteristics into a T-chart: Inherited or Environmental.

Inherited	Environmental
<ul style="list-style-type: none"> • Size • Color • Head • Antennae • Thorax • Six legs 	<ul style="list-style-type: none"> • Broken wing cover • Lost a leg due to fighting

- 5. What is an example from the text of how the environment affects trees?**

An oak tree might have a lot or a few acorns depending on how good the environment is.

-or-

A tree might become wind-shaped if it is planted in a place with a lot of wind.