Name: _____ Date: _____

Hitchhiking Burrs and the Idea Behind Velcro

Circle group

After a walk through a field in late summer, you may find prickly balls stuck to your socks. They are burrs. They are not trying to annoy you. They are a clever way for a plant to move its seeds.

A plant cannot walk. So each kind has a way to send its seeds away from the parent. If seeds fell straight down, the young plants would crowd together. They would compete for light, water and soil. Some plants use wind. Some use water. Burr plants use animals that pass by. A burr is covered with tiny hooks. A deer, a dog or a hiker brushes past. The hooks catch on fur or cloth. The burr rides along, sometimes for miles. Then it falls off in a new place.

Burrs gave a Swiss engineer an idea in the 1940s. After a hike, he saw how tightly burrs clung to his clothes. He looked at them under a microscope. He saw hundreds of little hooks catching on loops of thread. Later he made a fastener with one strip of tiny hooks and one of soft loops. It became hook-and-loop tape, known by the brand name Velcro.

Inventors still copy nature. The idea has a name: biomimicry. It means imitating life.

Questions

1. What covers a burr and helps it catch on fur or cloth?

_____

_____

2. Why do plants send seeds away from the parent?

_____

_____

3. What did the engineer see under the microscope?

_____

_____

4. What is biomimicry?

_____

_____

5. Why does the writer say burrs are not trying to annoy you?

_____

_____

6. How does a burr help a plant grow in a new place?

_____

_____

Words to know

burrs: prickly seed cases that stick to fur and clothes
compete: to try to get the same thing that others need
engineer: a person who designs and builds useful things
fastener: something that joins two things together, such as a zipper
microscope: a tool that makes very small things look bigger

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Hitchhiking Burrs and the Idea Behind Velcro

Triangle group

After a walk through a field in late summer, you may find small, prickly balls stuck to your socks. They are burrs, and they are not trying to annoy you. They are a clever way for a plant to move its seeds.

A plant cannot walk, so each kind has found a way to send its seeds away from the parent. If seeds fell straight down, the young plants would crowd together and compete for light, water and soil. Some plants use wind, and some use water. Burr plants use passing animals. Each burr is covered with tiny hooks. When a deer, a dog or a hiker brushes past, the hooks catch on fur or fabric. The burr rides along, sometimes for miles, until it is scratched loose or falls off in a new spot.

Burrs gave a Swiss engineer a useful idea in the 1940s. After a hike, he noticed how stubbornly the burrs clung to his clothes and looked at them under a microscope. He saw hundreds of little hooks catching on loops of thread. He later made a fastener with one strip of tiny hooks and another of soft loops. It became hook-and-loop tape, which many people know by the brand name Velcro.

Inventors still copy designs from nature. The idea has a name: biomimicry, which means imitating life.

Questions

1. What covers a burr and helps it catch on fur or cloth?

_____

_____

2. Why do plants need to send their seeds away from the parent?

_____

_____

3. What did the engineer see under the microscope?

_____

_____

4. What is biomimicry?

_____

_____

5. Why does the writer say burrs are not trying to annoy you?

_____

_____

6. How does a burr help a plant grow in a new place?

_____

_____

Words to know

burrs: prickly seed cases that stick to fur and clothes
compete: to try to get the same thing that others need
engineer: a person who designs and builds useful things
fastener: something that joins two things together, such as a zipper
microscope: a tool that makes very small things look bigger

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Hitchhiking Burrs and the Idea Behind Velcro

Square group

After an afternoon tramping through a field in late summer, you may discover small, prickly balls clinging to your socks. These are burrs, and they are not deliberately trying to irritate you. They represent a clever strategy that a plant uses to disperse its seeds.

A plant cannot walk, so each kind has evolved some method of sending its seeds away from the parent. If seeds simply dropped straight down, the young plants would crowd together and compete for light, water and soil. Some plants rely on wind, and others on water. Burr plants rely on passing animals. Every burr is covered with tiny hooks. When a deer, a dog or a hiker brushes past, the hooks catch on fur or fabric. The burr travels along, sometimes for miles, until it is scratched loose or drops off in a new location.

Burrs gave a Swiss engineer a valuable idea in the 1940s. After a hike, he noticed how stubbornly the burrs clung to his clothes and examined them under a microscope. He observed hundreds of tiny hooks snagging on loops of thread. He later designed a fastener consisting of one strip of minute hooks and another of soft loops. It became hook-and-loop tape, which many people know by the brand name Velcro.

Inventors continue to borrow designs from nature. The approach has a name: biomimicry, which means imitating life.

Questions

1. What covers a burr and helps it catch on fur or fabric?

_____

_____

2. Why do plants need to disperse their seeds away from the parent?

_____

_____

3. What did the engineer observe under the microscope?

_____

_____

4. What is biomimicry?

_____

_____

5. Why does the writer say burrs are not deliberately trying to irritate you?

_____

_____

6. How does a burr help a plant establish itself in a new place?

_____

_____

Words to know

burrs: prickly seed cases that stick to fur and clothes
compete: to try to get the same thing that others need
engineer: a person who designs and builds useful things
fastener: something that joins two things together, such as a zipper
microscope: a tool that makes very small things look bigger

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Hitchhiking Burrs and the Idea Behind Velcro

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Hitchhiking Burrs and the Idea Behind Velcro

Easier · 211 words · Flesch-Kincaid grade 2.4

1. Tiny hooks.
2. Young plants would crowd together and compete for light, water and soil.
3. Hundreds of tiny hooks catching on loops of thread.
4. Imitating life, or copying designs from nature.
5. They are only a way for the plant to spread its seeds.
6. It rides on an animal or person and falls off far from the parent plant.

Triangle: Hitchhiking Burrs and the Idea Behind Velcro

This passage · 224 words · Flesch-Kincaid grade 4.8

1. Tiny hooks.
2. Young plants would crowd together and compete for light, water and soil.
3. Hundreds of tiny hooks catching on loops of thread.
4. Imitating life, or copying designs from nature.
5. They are only a way for the plant to spread its seeds.
6. It rides on an animal or person and falls off far from the parent plant.

Square: Hitchhiking Burrs and the Idea Behind Velcro

Harder · 231 words · Flesch-Kincaid grade 6.8

1. Tiny hooks.
2. Young plants would crowd together and compete for light, water and soil.
3. Hundreds of tiny hooks snagging on loops of thread.
4. Imitating life, or borrowing designs from nature.
5. They are simply a strategy the plant uses to spread its seeds.
6. It travels on an animal or person and drops off far from the parent plant.