Name: _____ Date: _____

The Keystone at the Top of a Stone Bridge

Circle group

Long ago, builders made bridges from stone. Stone is strong. But a flat stone over a wide river can crack. So builders used an arch. An arch is a curve.

An arch is made of many stones. First, workers build a wooden frame in the shape of the curve. They set the stones on the frame. They start at both sides and go up. The last stone goes at the top. It is the keystone.

Now the stones press on each other. The weight of the bridge pushes down and out. The stones at the bottom push back. This holds the arch firm. Then the frame is taken away. The arch stands by itself.

Some old stone bridges are still used today.

Questions

1. What shape did builders use for a stone bridge over a wide river?

_____

_____

2. What is the last stone in an arch called?

_____

_____

3. What do workers build first to hold the stones?

_____

_____

4. Where does the keystone go?

_____

_____

5. What happens to the wooden frame at the end?

_____

_____

6. Why is an arch strong?

_____

_____

Words to know

arch: a curved shape that holds up the weight above it
keystone: the last stone placed at the top of an arch
frame: a structure that holds something in place while it is built
weight: how heavy something is
bridge: a path built to carry people over water or a gap

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: _____

The Keystone at the Top of a Stone Bridge

Triangle group

Long ago, builders made bridges out of stone. Stone is very strong, but a flat stone laid across a wide river can crack. So the builders used a curve called an arch.

An arch is built from many stones cut to fit together. First, workers make a wooden frame in the shape of the curve. They set the stones on the frame one at a time, working up from both sides. The last stone goes in at the very top. It is called the keystone.

When the keystone is in place, the stones press against each other. The weight of the bridge pushes down and out along the curve. The stones at the bottom push back and hold the arch firm. Then the wooden frame can be taken away, and the arch stands on its own.

Some stone arch bridges that were built long ago are still used today.

Questions

1. What shape did builders use to carry a stone bridge over a wide river?

_____

_____

2. What is the last stone in an arch called?

_____

_____

3. What do workers build first to hold the stones?

_____

_____

4. Where does the keystone go?

_____

_____

5. What happens to the wooden frame when the arch is finished?

_____

_____

6. Why might an arch last longer than a flat stone laid across a river?

_____

_____

Words to know

arch: a curved shape that holds up the weight above it
keystone: the last stone placed at the top of an arch
frame: a structure that holds something in place while it is built
weight: how heavy something is
bridge: a path built to carry people over water or a gap

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: _____

The Keystone at the Top of a Stone Bridge

Square group

Centuries ago, builders constructed bridges out of stone. Although stone is remarkably strong, a flat slab laid across a wide river can crack under its own weight. To solve this problem, builders turned to a graceful curve known as an arch.

An arch is assembled from many carefully cut stones. First, workers construct a wooden frame in the shape of the curve. They set the stones upon the frame one at a time, working upward from both sides until they meet in the middle. The final stone, which is placed at the very top, is called the keystone.

Once the keystone is in place, the stones press firmly against one another. The weight of the bridge pushes down and outward along the curve, and the stones at the bottom push back and hold the arch steady. At that point the wooden frame can be removed, and the arch supports itself.

A number of stone arch bridges that were built long ago are still in use today.

Questions

1. What shape did builders use to carry a stone bridge across a wide river?

_____

_____

2. What is the final stone placed in an arch called?

_____

_____

3. What do workers construct first to hold the stones while they work?

_____

_____

4. Where is the keystone placed?

_____

_____

5. What happens to the wooden frame once the arch is complete?

_____

_____

6. Why might an arch last longer than a flat slab of stone across a river?

_____

_____

Words to know

arch: a curved shape that holds up the weight above it
keystone: the last stone placed at the top of an arch
frame: a structure that holds something in place while it is built
weight: how heavy something is
bridge: a path built to carry people over water or a gap

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: The Keystone at the Top of a Stone Bridge

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

Circle: The Keystone at the Top of a Stone Bridge

Easier · 122 words · Flesch-Kincaid grade 0.5

1. An arch.
2. The keystone.
3. A wooden frame.
4. At the top of the arch.
5. It is taken away, and the arch stands by itself.
6. The stones press on each other and hold each other up.

Triangle: The Keystone at the Top of a Stone Bridge

This passage · 149 words · Flesch-Kincaid grade 2.7

1. An arch.
2. The keystone.
3. A wooden frame in the shape of the curve.
4. At the very top of the arch.
5. It is taken away, and the arch stands on its own.
6. The stones in an arch press against each other and hold each other up, but a flat stone can crack.

Square: The Keystone at the Top of a Stone Bridge

Harder · 166 words · Flesch-Kincaid grade 5.7

1. An arch.
2. The keystone.
3. A wooden frame in the shape of the curve.
4. At the very top of the arch.
5. It is removed, and the arch supports itself.
6. The stones in an arch press against one another and hold each other up, while a flat slab can crack.