

4th Grade Inner Space Cavern Post-Tour Assessment

Background

As your students learned from the Pre-Visit Activity on the Water Cycle, water is constantly moving and plays a large role in our ecosystem. Caves are also dependent on water. The void of the cave was formed from acidic water dissolving the limestone. Today, water drips into the cave and can make our formations grow, fill our rim pools, or continue its journey downward to the aquifer. From there, water may either remain underground, flow out through a river, or be manually removed via a well. Well water will be consumed by animals (including people), or returned to the soil (e.g. watering the lawn).

Activity

(Refer to Pre-Visit Activity #3, “The Water Cycle,” for detailed directions and correlations.)

Recall what you learned about water movement through cave systems on your tour of Inner Space Cavern. Review the ways that water comes into play in a cave environment with your students.

Explain to your students that in areas with aquifers (represented by the Ground Water station), some people obtain their drinking water directly from the aquifer via wells. In other cases, the water from an aquifer will flow into a river via underground springs. The highest level of water in the aquifer is called the water table.

Have the students play the Water Cycle game again and create another Water Cycle story or illustration, this time including the journey a water molecule might take as it makes its way through the ground and into Inner Space Cavern. Have them describe in detail, either in the story or as labels on the picture, what is happening to the water and why. “Water in the soil picks up carbon dioxide and carries calcite down into the cave. The calcite is deposited on the ceiling and the water drops down into a rim pool...” Encourage them to apply everything they learned from the activities and on their tour of Inner Space Cavern to their stories.

Station: Soil



Number rolled on die	Next station	Reason for move
1	Cavern Formations	Water filters through the ground to the void of the cave.
2	Rim Pools	Water filters through the ground to the rim pools in the cave
3	Aquifer	Water is pulled by gravity down to the water table.
4	Aquifer	Water is pulled by gravity down to the water table.
5	River	The soil is saturated, so water runs off into a river.
6	Stay	Water remains on the surface (perhaps in a puddle, or adhering to a soil particle.)

Station: Cavern Formations



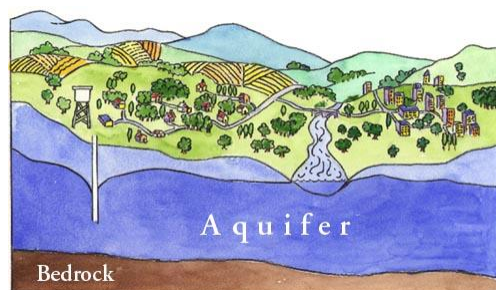
Number rolled on die	Next station	Reason for move
1	Rim Pools	Water drips from the formations and into a rim pool after depositing calcite.
2	Rim Pools	Water drips from the formations and into a rim pool after depositing calcite.
3	Rim Pools	Water drips from the formations and into a rim pool after depositing calcite.
4	Aquifer	Water is pulled by gravity down to the water table.
5	Aquifer	Water is pulled by gravity down to the water table.
6	Stay	Water remains on the ceiling as calcite is deposited.

Station: Rim Pools



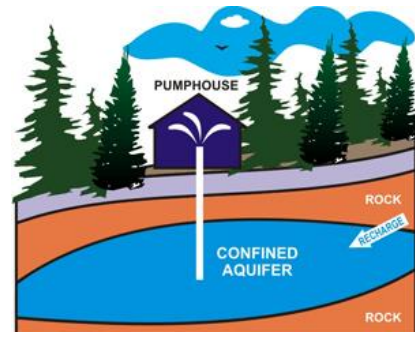
Number rolled on die	Next station	Reason for move
1	Aquifer	Water is pulled by gravity down to the water table.
2	Aquifer	Water is pulled by gravity down to the water table.
3	Aquifer	Water is pulled by gravity down to the water table.
4	Animal	Cave-dwelling creatures drink the water.
5	Stay	Water remains in the rim pool.
6	Stay	Water remains in the rim pool.

Station: Aquifer



Number rolled on die	Next station	Reason for move
1	Well	Water is pumped out of the aquifer for use by humans.
2	Well	Water is pumped out of the aquifer for use by humans.
3	River	Water filters into a river.
4	Stay	Water remains at or below the level of the water table.
5	Stay	Water remains at or below the level of the water table.
6	Stay	Water remains at or below the level of the water table.

Station: Well



Number rolled on die	Next station	Reason for move
1	Animal	Water from the well is consumed by humans, pets, and livestock.
2	Animal	Water from the well is consumed by humans, pets, and livestock.
3	Animal	Water from the well is consumed by humans, pets, and livestock.
4	Soil	Water from the well is used to water the lawn and agricultural crops.
5	Stay	Water remains in the well and awaits use.
6	Stay	Water remains in the well and awaits use.

Station: Animal

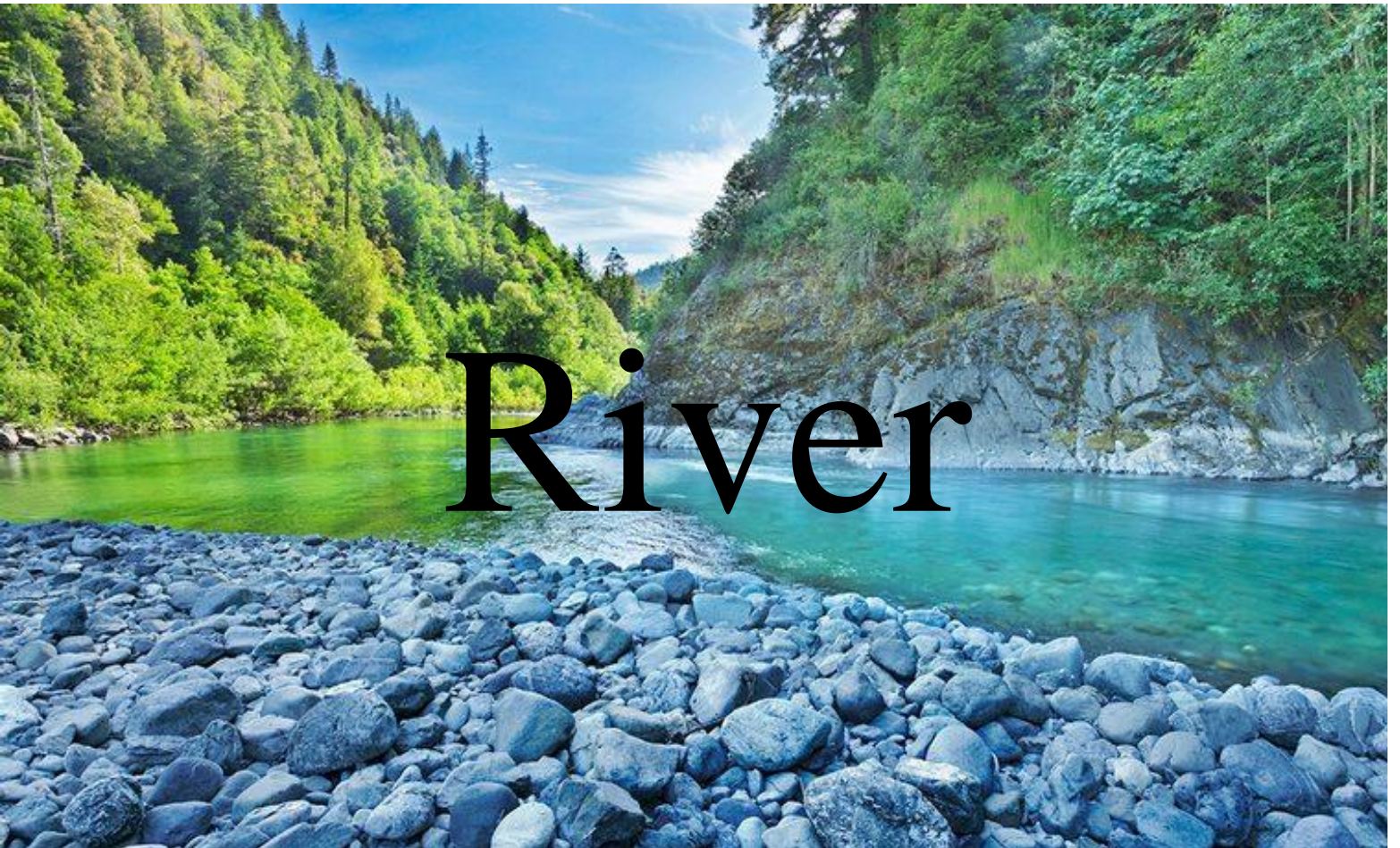
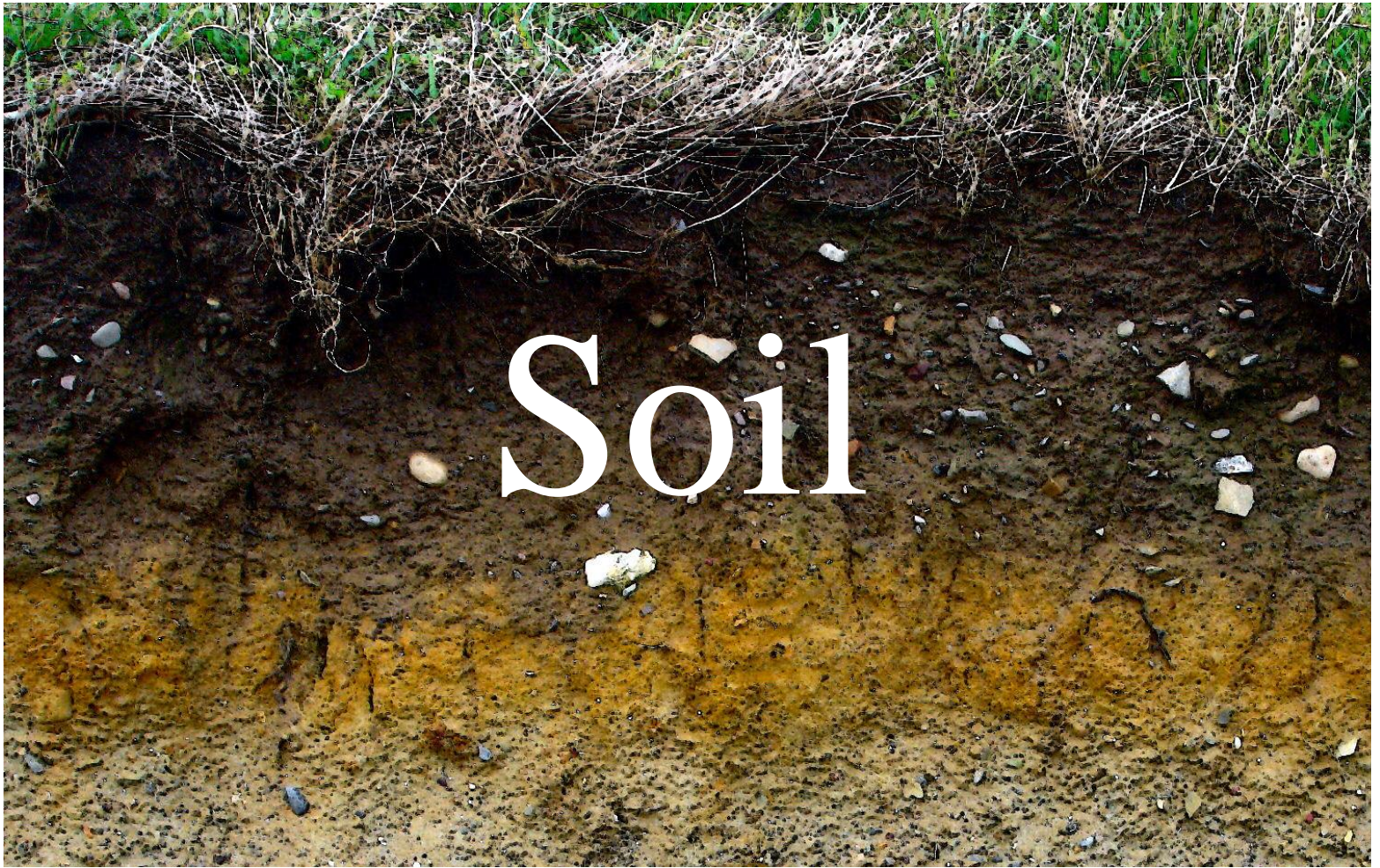


Number rolled on die	Next station	Reason for move
1	Rim Pools	Water is excreted through feces and urine.
2	Soil	Water is excreted through feces and urine.
3	Soil	Water is excreted through feces and urine.
4	River	Water is excreted through feces and urine.
5	Stay	Water is incorporated into the body.
6	Stay	Water is incorporated into the body.

Station: River



Number rolled on die	Next station	Reason for move
1	Animal	An animal drinks the water.
2	Animal	An animal drinks the water.
3	Soil	Water washes up on the banks of the river.
4	Aquifer	Water is pulled by gravity; it filters into the soil.
5	Stay	Water remains in the current of the river.
6	Stay	Water remains in the current of the river.

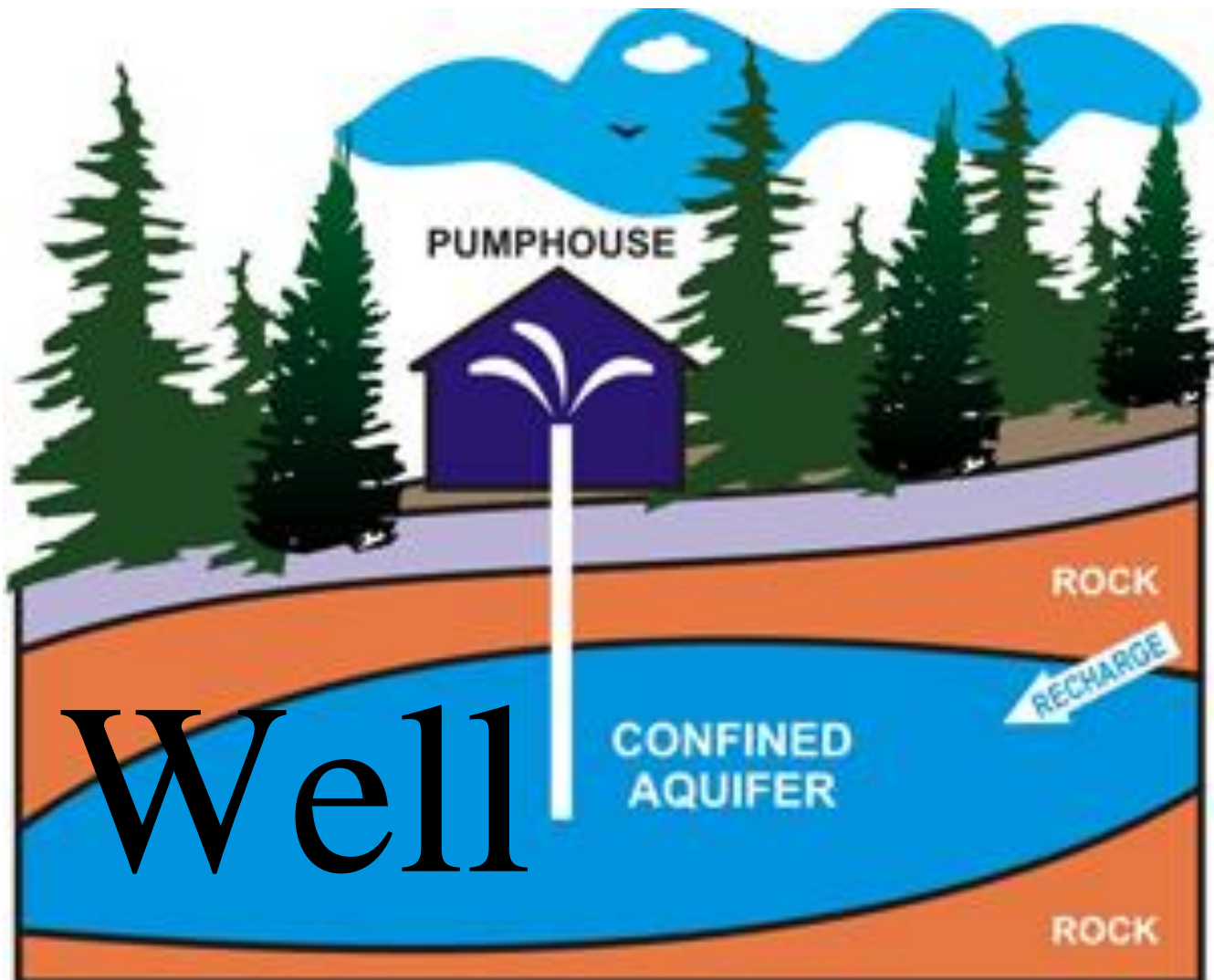
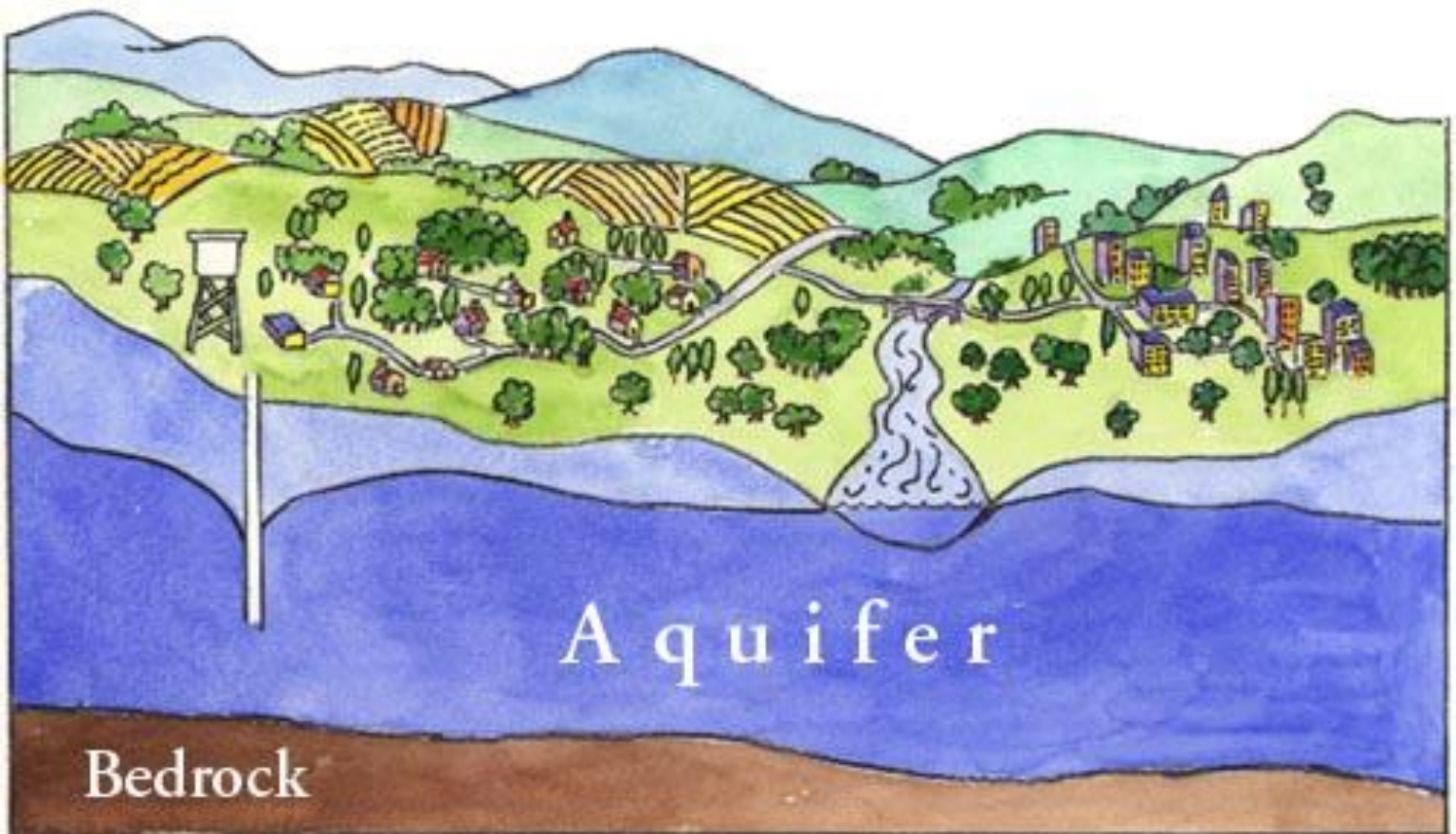


Cavern Formations



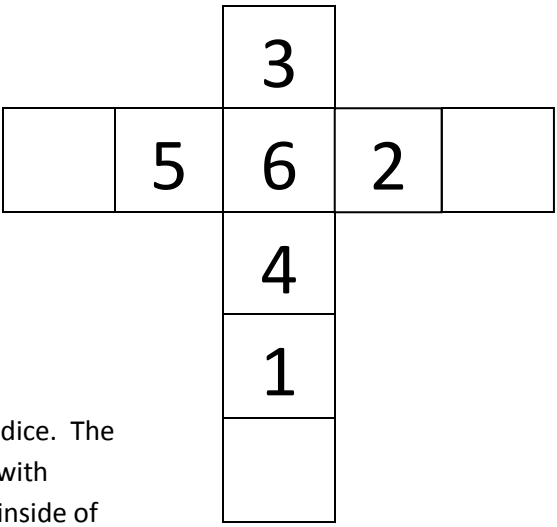
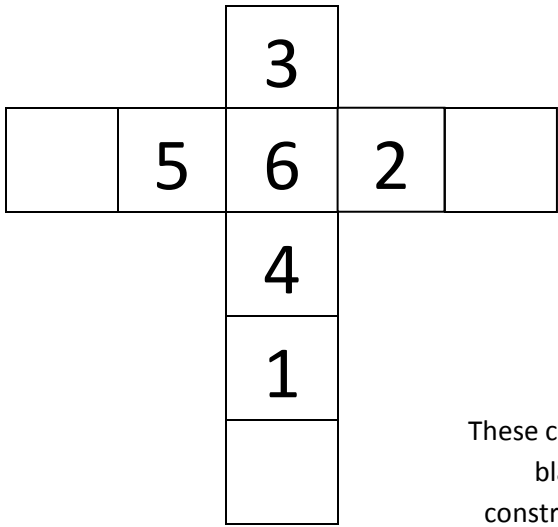
Rim Pools







Animal



These can be used in place of dice. The blank boxes are to help with construction, and go on the inside of each die. The tab with the 3 should be folded last and taped in place.

