**Pre/Post-Quiz Answer Key**

**Scenario:** Susan and Amir are on their way to school in a car when a tire goes flat. It is extremely important for them to be at school because their science teacher is throwing them a class party at the end of the day. The car has a spare tire, but the spare tire is also flat. The school is several miles away and their cell phones have no reception, so they won’t be able to catch a ride with anyone. They have been studying the engineering design process so they decide to apply that method to help them find a solution to their current situation.

**Questions:**

1. Which step of the engineering design process (EDP) would they use when coming up with ideas for how to get to school?

Developing ideas, imagining, developing possible solutions, brainstorming

1. Apply the first step of the EDP to the scenario above. What is your answer to the first step?

The first step is: Ask: Identify the need and constraints.

In this scenario: They need to get to school but their car’s tire went flat.

1. Is it okay to fail when using the EDP? If you happen to experience a failure when using the EDP, what would be the next step?

Yes, it is okay to fail because we learn a lot from failures, and we make improvements based on what we learn. Identify the step where the failure occurred and go back to an earlier step that can be modified to make improvements to get the project closer to a successful solution.

1. If you came up with a solution to the problem in the flat tire scenario, what would be the next step to apply when using the EDP?

Construct/create/build a prototype.

1. What are the three types of rocks?

Igneous, metamorphic, sedimentary

1. What are the types of mechanical weathering?

Ice wedging, abrasion, thermal expansion and contraction

1. What do we call the type of mechanical weathering that is caused by friction when rocks or rock particles rub against each other?

Abrasion