

Creating opportunities on line



Acid River

Procedure Steps:

- Your group will build a bridge to cross an acid river by strategically placing bridge connections (sheets of paper) across the river. If a connection is placed over the river and a body part is not touching it, that connection will float away. You need to get all of your team from one side of the river to the other side across your bridge.
- Brainstorm and come up with a plan on how to cross the river without sacrificing any of your bridge connections.
- Try it with 10 bridge connections. If it doesn't work as planned, be sure you communicate and make changes. Don't forget, you will lose any unattended bridge connections down the river!

Objective: To get your entire team across the acid river by building a bridge across it and losing the least amount of bridge connections.

Materials:
15 Sheets of paper per team

Explore and Document:

- How many bridge connections do you really need? How many did you use? How many did you lose?
- How fast did you build your bridge and get your team across? Could you do it faster? How?
- How could your team work better together? How could you improve your communication?

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Activity Summary:

By considering the type of materials available to you and the length that your bridge connections had to cover to cross the acid river, you decided what type of bridge would be best. This is exactly how civil engineers would approach this problem, by first assessing the situation and what was required to make the project functional.

Teamwork is also essential in engineering. When teams work together, better solutions can be reached. In building bridges, a civil engineer might have to work with a materials engineer to determine the right materials to use in construction. Engineers might have to work with construction crews on the building of the bridges. They might have to work with accountants to make sure they aren't spending too much money on the bridge. It takes all kinds of different people on a team to build a bridge.



Tie to Engineering ~ The Role of Plastics in Recycling

All types of engineers need to know how bridges react to loads and the advantages of different structures. Not only do civil engineers work on bridges, but there are also material engineers who design the best building material for the climate and type of stresses that the bridge will endure. Depending on the special features of a bridge a mechanical engineer might work on any aspects of the bridge that are designed to move.