Think about a train moving along its tracks. In the train, two workers, one on either end of the train, are shoveling coal into the engine at a steady speed. This particular train is also equipped with two sets of brakes, one in the front and one in the back.

The train needs to continue to maintain its constant speed, but also must be able to stop when needed. In groups, discuss what would happen to the speed/control of the train during each of these following scenarios. Would the train operate normally, always move without stopping, or never be able to move?

- a. One of the workers shoveling coal breaks his shovel
- b. Both of the workers break their shovels
- c. One of the workers uses a bigger shovel
- d. Both workers use bigger shovels
- e. One of the workers begins to shovel twice as fast
- f. Both workers get friends to help shoveling
- g. One of the breaks gets stuck (continuous stopping)
- h. One of the brakes fails to work
- i. Both brakes fail