

KE and Speed CER

Question: *How does the **speed** of a vehicle affect its kinetic energy?*

In this activity, you will complete a series of experiments based on the procedure you developed in a previous lesson. Your goal is to measure the effect of speed on kinetic energy. Before completing your experiments, discuss this activity with your team to make sure everyone is clear about the question. What is the independent variable? What is (are) the controlled variable(s)? What is the dependent variable? How will you measure it?

Note: Each team member should fill out and turn in their own copy of this form. Write down your ideas in your own words. It is OK if you think differently from your teammates!



Step 1: Make a Claim!

- State what you think will happen when you do your speed and KE experiments.
- How will changing the speed of the ball affect the energy delivered to the target at the bottom of the ramp?

Step 2: Gather Evidence

- Complete the experiments you designed earlier.
- Use the table on the next page to record your data. Use as many rows and columns as you need. Be sure to organize your data in a logical way. Label each column. You will refer to this important information again later!

Step 3: Analyze your Data.

- Point out the parts of your data that support your claim.
- Rather than just repeating the data, summarize it and compare it to help the reader see how it shows that your claim is reasonable.
- If you have data that appears to show that your claim is incorrect, share that also. Perhaps you need to revise your claim to agree with the data!

Step 4: Reasoning

- Use science principles, science facts, and new knowledge you have gained so far to explain why your evidence supports your claim.
- This would be a good place to share what you might already know about kinetic energy.

This form is your EXIT TICKET. Remember: each of you should write your thinking in your own words and turn the form in at the end of the lesson.