

A. Taking Stock: What have we figured out?



Share your ideas: When we decided to look at the drink warming up, what new things did we figure out about how this happens?

B. Our Big Questions

What's happening to the drink as it warms up?

What does temperature measure, and how can we use temperature to follow the energy?

How can particles bumping into each other transfer energy?

How does the temperature of the water in the cup impact the direction of energy flow?

Where does the energy come from when a cold drink warms up?

How does energy transfer into a cold drink when it warms up?

C. Updating Our Model Tracker: What Have We Figured Out?



What have we figured out that helps answer the question:
How does energy transfer into a cold drink when it warms up?

Decide as a class what to add to your **Model Tracker**.

D. Developing a Model of Our Ideas

1. Build a model to explain: **How does energy transfer into a cold drink when it warms up?**
1. Draw a model for both the regular cup and the new cup.



E. Our Big Questions

What's happening to the drink as it warms up?

What does temperature measure, and how can we use temperature to follow the energy?

How can particles bumping into each other transfer energy?

How does the temperature of the water in the cup impact the direction of energy flow?

Where does the energy come from when a cold drink warms up?

How does energy transfer into a cold drink when it warms up?

F. Consensus Model: Energy Transfer



Share your ideas with the whole class.

How does energy transfer into a cold drink when it warms up?



G. Touching Hot and Cold

1. Title a new page in your notebook.
1. Draw a model for explaining what happens when we touch something hot, like a pan on the stove.
1. Draw a model for explaining what happens when we touch something cold, like an ice cube.
1. Make sure your models include what is happening at the particle scale.

H. Driving Question Board

What questions can we answer now?

What are we still wondering about?

I. Looking Ahead: The Design Challenge

Exit ticket

What have you figured out that will help you answer the unit question, "*How can we design a cup to keep a drink cold?*"