









How to Pop Popcorn

Name: _____

S8P2. Obtain and communicate information about heat transfer. (i.e. conduction, radiation, and convection.)

In this activity, you will plan and carry out an investigation to determine the “best” way to POP popcorn. You will use the materials that are available and **must** decide how you can use *convection, conduction, and radiation*.

Materials:

Air popper 	Corn kernels 
Hot plate 	Pan 
Microwave 	Paper bag 

Controls: Every experiment needs to have **things that are the same (controls)**. An example of this is that all methods will use the same type of corn kernels and the same amount (mass) of kernels.

Variables: Every experiment needs to have **ONE thing that is changed (variable)**. The way the kernels are cooked is what is changed or the variable. This is what you are testing.

Procedure: You will need to **determine the materials you will use** for each test.

Use the graphic organizer to complete your plan. *Once it is complete*, we will conduct the experiment.

Data Collection: Data collection is an important part of an experiment. Like a **control**, it must remain the same for all experiments. This allows the data to be compared.

Decide on a data collection technique for ALL 3 experiments.

For example, how long will it take for...

1. How long does it take for the first kernel to pop?
2. How long will it take for there to be 4 seconds between the pops (aka popcorn is done)?
3. How many kernels are left after the time has elapsed?

What is the **data collection method** you will use for **all** experiments? **It must be the same for ALL.**

Pick one of the options above and write it on the line below.

Experiment Question: What method of popping popcorn is the "best"? (You will determine what makes it the best method: Is it the fastest popping OR how many kernels popped?)

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Name: _____

Experiment 1: _____

Type of energy transfer? _____

List all materials needed for the experiment below. (*These are the things you will be changing in each experiment*)

Based on what you have learned about energy transfer, what do you think will happen during the experiment? Be SPECIFIC.

Data collection:

Type of Data	Describe EXACTLY how you are collecting data
Time or kernels (Circle One)	

Experiment 2: _____

Type of energy transfer? _____

List all materials needed for the experiment below. (*These are the things you will be changing in each experiment*)

Based on what you have learned about energy transfer, what do you think will happen during the experiment? Be SPECIFIC.

Data collection:

Type of Data	Describe EXACTLY how you are collecting data
Time or kernels (Circle One)	

Experiment 3: _____

Type of energy transfer? _____

List all materials needed for the experiment below. (*These are the things you will be changing in each experiment*)

Based on what you have learned about energy transfer, what do you think will happen during the experiment? Be SPECIFIC.

Data collection:

Type of Data	Describe EXACTLY how you are collecting data
Time or kernels (Circle One)	

How to Pop Popcorn

Name: _____

Experiment 1: Air Popper

Type of energy transfer (*Circle One*): Convection Conduction Radiation

List all materials needed for the experiment below. (*These are the things you will be changing in each experiment*)

Based on what you have learned about energy transfer, what do you think will happen during the experiment? *Based on what I know about energy transfer, the kernels that are air popped will*

Data collection:

Type of Data	Describe EXACTLY how you are collecting data
Time or kernels (Circle One)	

Experiment 2: Pan Popping

Type of energy transfer (*Circle One*): Convection Conduction Radiation

List all materials needed for the experiment below. (*These are the things you will be changing in each experiment*)

Based on what you have learned about energy transfer, what do you think will happen during the experiment? *Based on what I know about energy transfer, the kernels that are pan popped will*

Data collection:

Type of Data	Describe EXACTLY how you are collecting data
Time or kernels (Circle One)	

Experiment 3: Microwave

Type of energy transfer (*Circle One*): Convection Conduction Radiation

List all materials needed for the experiment below. (*These are the things you will be changing in each experiment*)

Based on what you have learned about energy transfer, what do you think will happen during the experiment? *Based on what I know about energy transfer, the kernels that are microwaved will*

Data collection:

Type of Data	Describe EXACTLY how you are collecting data
Time or kernels (Circle One)	