

HOT CHANGES

ACTIVITY



PREDICT AND TEST THE EFFECTS OF HEATING DIFFERENT MATERIALS.

How do materials change when we heat them?

TIME 15 minutes

MATERIALS

- 2 regular size pieces of paper
- Access to a stove or hot plate
- Access to a freezer
- 3 items that melt when heated, such as: chocolate, birthday candles, gummy worms
- 3 items that do not melt, such as, a rock, rice or beans, a slice of apple (or other fruit)
- 6 small pieces of aluminum foil or other thin, heatproof material such as a foil muffin tin

DIRECTIONS

1 SET UP

Shape the aluminum foil pieces like cups with raised sides so the melted materials will not leak out. Your child can help you put a small amount of each item into its own foil cup. Write "Will Change" on one piece of paper. Write "Will NOT Change" on the other piece of paper.

2 GOAL

Your child will observe each material and predict what will happen to each material when it is heated. Then you will heat the materials so your child can **observe** what happens.

3 EXPLORE

Set all the materials on the table. Give your child time to **observe** the materials. Put the "Will Change" and "Will NOT Change" papers on the table. Ask your child to predict which materials will change when heated and which ones will NOT change. Your child can put the different materials on the papers.

4 EXPLORE

Help your child write the name of each material on either the "Will Change" paper or the "Will NOT Change" paper to keep track of what they predict.



5 EXPLORE

Your child can watch while you safely heat the materials in their foil cups.

Safety tips:

- Use **extreme caution when heating items.**
- Do not heat items that may catch fire, release toxic fumes, or explode.
- Do **not** use a microwave to heat items for this activity.
- Keep the heat source out of your child's reach.
- Tell your child that the items are **too hot to touch.**
- Do not leave the heat source unattended.



6 EXPLORE

While items are heating, you and your child can watch the Predict video. Act out the song together!

7 EXPLORE

Show your child one of the heated materials and an unheated sample of the material. Ask your child if it melted or not. Check the “Will Change” and “Will NOT Change” papers, to see if the material did what they expected it to do! Then check the other materials.

8 SHARE

Encourage your child to share what they notice. What's different about each heated and unheated material? What is the same?

9 WONDER TOGETHER

Remind your child about what they saw in the Movie Theater Meltdown video: When Stevie Heat melted the Fro Yo, it changed to liquid. But AJ used his Chill Gadget to make the Fro Yo cold and it got solid again.

Ask your child what they think the melted items will be like after being in a freezer! Then put the melted items into the freezer.



The contents of this document were developed under a grant from the U.S. Department of Education. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government. PR/Award Number U295A150012. The U.S. Department of Education is the funding agency.



TWIN
CITIES
PBS