Arkansas K-12 Science Standards Lesson Planning Template

Grade:2nd grade	**Topic:** Reversible changes in matter	Lesson 1

Brief Lesson Description: Crayon melting

Performance Expectation(s): 2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

Specific Learning Outcomes: I can understand that some changes are reversible and some are irreversible.

Narrative / Background Information

Prior Student Knowledge: -Students need to know the difference between physical and chemical changes. (melting vs dissolving)

Science & Engineering Practices:	**Disciplinary Core Ideas:**	**Crosscutting Concepts:**
__Asking questions and defining problems __Developing and using models X_Planning and carrying out investigation X_Analyzing and interpreting data __Using math and computational thinking X_Constructing explanations/designing solutions X_Engaging in argument from evidence __Obtaining/evaluating/communicating info	**Chemical Reactions**	X_Patterns X_Cause and effect __Scale, proportion and quantity __Systems and system models X_Energy and matter __Structure and function __Stability and change

Possible Preconceptions/Misconceptions:
-heat causes a chemical change which students will think all are irriversible.

LESSON PLAN – 5-E Model

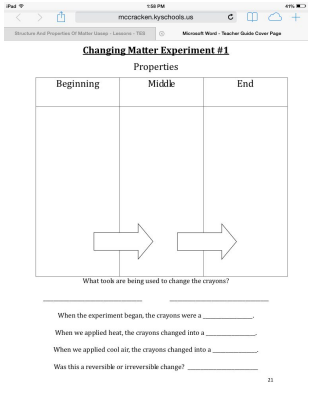
ENGAGE: Opening Activity – Access Prior Learning / Stimulate Interest / Generate Questions:

The Day the Crayons Came Home video:

https://www.youtube.com/watch?v=3_ggr7OlYkQ

Discuss with class to check for understanding.

EXPLORE: Lesson Description – Materials Needed / Probing or Clarifying Questions:
Students choose a crayon and fill out crayon observation sheet on their own. Then choose a way you want to change your crayon and write a post card. Share out and then choose one whose crayon went in the dryer or outside, discuss what happened to their crayon.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Changing Matter Experiment #1

Properties

Beginning	Middle	End

What took are being used to change the crayons?

When the experiment began, the crayons were a _____.

When we applied heat, the crayons changed into a _____.

When we applied cool air, the crayons changed into a _____.

Was this a reversible or irreversible change? _____

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Make a class chart of properties of a crayon. (ex. it writes, smell, how does it feel)

EXPLAIN: Concepts Explained and Vocabulary Defined:
Read "Freezing and Melting" in the Change It book. Make a t-chart with ways to heat things/ ways to cool things.

Vocabulary: heating, cooling

ELABORATE: Applications and Extensions: Students will peel the paper off their crayon and then break it into small pieces. Students will draw what their crayon looks like broken apart in the tray. Then teacher puts crayons in oven to melt. Teacher then shows the students the mold with the liquid from the crayon in it. Have students draw a picture of what it looks like now. Then teacher puts the mold in the freezer. Pass out the new crayons to the students and then discuss properties of the new crayon again.

EVALUATE:

Formative Monitoring (Questioning / Discussion):
Students will fill out an exit ticket describing what happened to their crayon.
Summative Assessment (Quiz / Project / Report):

Elaborate Further / Reflect: Enrichment: Next day/week move into irreversible changes

Materials Required for This Lesson/Activity			
Quantity	**Description**	**Potential Supplier (item #)**	**Estimated Price**
25	crayons		
2	mold tray (silicone candy tray)		
25	observation worksheet		
	oven and oven mitt		
	Change It by: Adrienne Mason		