

ALTERNATIVE LESSON PLANS FOR DISTANCE LEARNING

These alternative lesson plans condense what is taught and suggest ways to support students learning at home. We acknowledge that every situation is unique and strive to provide plans that can be used online or as printed packets. Focus on fewer scientific principles. Use print and audio readings. Share the videos that you can. Discuss if you can.

UNIT TITLE	IC2
DRIVING QUESTION	How Can I Make New Stuff from Old Stuff?

Lesson 1 (1 day)	How Is This Stuff the Same and Different?
Activity 1.1	Can I Make New Stuff from Old Stuff? Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_1-461.mp4 Teacher Note: as the temperature increases, the solution bubbles and turns the foil into a crumbly brownish orange substance (copper) and gives off a distinct, slightly unpleasant odor. The solution becomes murky and grayish; it's no longer a clear green-blue color.
Reading 1	<i>What Is Important about the Stuff I Use?</i>
Reading 2	<i>What Makes a Substance a Special Kind of Stuff?</i>

Lesson 2 (2 days)	Do Fat and Soap Dissolve in the Same Liquid?
Activity 2.1	Teacher Demonstration: Investigating Solubility Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_2-469.mp4 Data for this demonstration is found in the TE - Discussion: Pressing for Understanding.
Reading 1	<i>Why Can I Easily Wash Soap off My Hands with Water?</i>
Activity 2.2	Investigating Solubility of Soap and Fat Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_2-468.mp4 See apple Icon in TE for discussion of this video

Lesson 3 (2 days)	<i>Do Fat and Soap Melt at Different Temperatures?</i>
Activity 3.1	Investigating Melting Point Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-margarine_melting_points-458.mp4 https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-fat_melting_points-467.mp4 Share: data table from TE for discussion
Reading 1	<i>Melting Points</i>
Reading 2	<i>Does the Size of Something Affect Its Properties?</i>

Lesson 4 (2 days)	<i>What Other Properties Can Distinguish Soap from Fat?</i>
Activity 4.1	Exploring the Relationship between Mass and Volume Search for a YouTube video on density or use this: https://youtu.be/bm1infT_jll or https://youtu.be/GnBQ6vlutDM (these videos may be beyond the scope of the initial investigation)
Reading 1	<i>How Can Two Objects That Are the Same Size Have Different Masses?</i>
Activity 4.2	Do Fat and Soap Have the Same Density? Share data table from TE and discuss.

Lesson 5 (1 day)	<i>How Are Fat and Soap Different?</i>
Activity 5.1	Are Fat and Soap the Same or Different Substances? Share Projected Image 1. Scientific Explanations Share data table from TE and discuss
Reading 1	<i>What Evidence Would I Use to Tell if the Stones in a Ring Are the Same or Different?</i>
Reading 2	<i>Could Someone Change Straw into Gold?</i>

Lesson 6 (1 day)	<i>What Happens to Properties When I Combine Substances?</i>
Activity 6.1	Teacher Demonstration of Investigation Procedure Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_6-466.mp4 Teacher Note: a white precipitate (solid) forms on the sides of the bag that does not dissolve in the liquid. Then gas forms filling the bag and causing it to expand.
Reading 1	<i>What Is a Chemical Reaction?</i>

Lesson 7 (1 day)	Is Burning a Chemical Reaction?
Activity 7.1	<p>Is Burning a Chemical Reaction?</p> <p>Share setup videos:</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_te_v2_0_5_video-lesson_7-464.mp4</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_te_v2_0_5_video-lesson_7-470.mp4</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_7-457.mp4</p> <p>Share data tables of properties in TE for discussion</p>
Reading 1	<i>Is Burning a Chemical Reaction?</i>

Lesson 8 (3 days)	Does Acid Rain Make New Substances?
Activity 8.1	<p>How Can I Investigate Acid Rain in My Classroom?</p> <p>Share setup video:</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_8-460.mp4</p> <p>Teacher Note: The vinegar will tarnish and turn the copper a greenish color, while the penny with water will not change at all in appearance.</p>
Reading 1	<i>Why Is the Statue of Liberty Green?</i>
Activity 8.2	<p>Does Acid Rain Make New Substances?</p> <p>Share setup video:</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_8-459.mp4</p> <p>Share data table of properties from TE and discuss</p>
Reading 2	<i>Does Acid Rain Make New Substances?</i>
Activity 8.3	<p>Representing Chemical Reactions in Words and Symbols</p> <p>Share data table from TE and discuss.</p>
Reading 3	<i>What Are the Many Ways of Representing Any Chemical Reaction?</i>

Lesson 9 (1 day)	Is This a New Substance?
Activity 9.1	<p>Does Electrolysis of Water Make New Substances?</p> <p>Share setup video:</p> <p>https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_9-462.mp4</p> <p>This video does not however show the flame test after gas production. Search for a Youtube video of flame test after the electrolysis of water or use this: https://youtu.be/vFR9zUGt2C4 (this video does however use a different catalyst of sodium hydroxide)</p>
Reading 1	<i>What Is the Same and Different about Boiling Water and Electrolysis?</i>

Lesson 10 (1 day)	How Is a Mixture Different from a Chemical Reaction?
Activity 10.1	Do I Always Make New Substances When I Put Substances Together? Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_10-463.mp4 This video shows only the powder drink mix boiling, condensing, and evaporating. Share data table in TE to discuss remainder of activity.
Reading 1	<i>What Happens to Atoms and Molecules When I See Different Processes?</i>

Lesson 11 (1 day)	How Can I Make Soap from Fat?
Activity 11.1	How Can I Make Soap from Fat? Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_11-465.mp4
Reading 1	<i>Do People Really Make Soap from Fat?</i>

Lesson 12 (2 days)	Does Mass Change in a Chemical Reaction?
Activity 12.1	<i>Does Mass Change When Seltzer Tablets React?</i> Share setup video: https://d16dnhlej6sizh.cloudfront.net/assets/portal/Teacher-Portal-Resources/IC2_se_v2_0_5_video-lesson_12-456.mp4
Reading 1	<i>What Happens to Mass During a Chemical Reaction in an Open System?</i>
Reading 2	<i>What Happens to Mass during a Chemical Reaction in a Closed System</i>

Lesson 13 (1 day)	Is My Soap a New Substance?
Reading 1	<i>How Does My Soap Compare with Colonial Soap and Modern Soap?</i>

Appendix 1 (1 day)	Human Impacts on Living Resources
Reading 1	<i>Corn as a Renewable Resource</i>

Appendix 2 (1 day)	Making and Recycling Plastics
Reading 1	<i>What Are Plastics?</i>

SUMMATIVE ASSESSMENT: Students should be able to write a scientific explanation for the Driving Question. Students' writing from Lesson 14 Reading One can be used to assess their understanding of chemical reactions, atoms and molecules, and reactants and products. The Driving Question may now be answered with a complete, CER explanation using data from various investigations as evidence.

You might choose to emphasize only a portion of this as a final assessment, given what you are able to teach and what students are actually able to do during this remotely taught unit.