

GRADE 2 – SOLIDS AND LIQUIDS - STANDARD ALIGNMENT

SEGUNDO GRADO – SÓLIDOS Y LÍQUIDOS – ALINEACIÓN ESTÁNDAR

Investigation 1: SOLIDS

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
<p>Part 1: Introduce Solids</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION How can solids be described?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN ¿Cómo se pueden describir los sólidos?</p>	<p>(2-S1-C1) Inquiry Process: Observations, Questions, & Hypothesis: Observe, ask questions, and make predictions.</p> <p>(2-S1-C2) Inquiry Process: Scientific Testing: Participate in planning and conducting investigations, and recording data.</p> <p>(2-S1-C3) Inquiry Process: Analysis & Conclusions: Organize & analyze data; compare to predictions.</p>	<p>(2S1-C1) PO1 Formulate relevant questions about the properties of objects, organisms, and events in the environment using observations and prior knowledge. (See 2-S2-C1-01)</p> <p>(2-S1-C1) PO2 Predict the results of an investigation.</p> <p>(2-S1-C2) PO1 Demonstrate safe behavior and appropriate procedures in all science inquiry.</p> <p>(2-S1-C2) PO2 Participate in guided investigation in life , physical, and earth and space sciences.</p> <p>(2-S1-C2) PO4 Record data from guided investigations in an organized and appropriate format (e.g. lab book, log, notebook, chart paper). (See W02-S3C2-01 and W02-S3C3-01)</p> <p>(2-S1-C3) PO1 Organize data using graphs, tables, and journals.</p> <p>(2-S1-C3) PO2 Construct reasonable explanation of observations on the basis of data obtained.</p> <p>(2-S1-C3) PO3 Compare the results of the investigation to predications made prior to the investigation.</p> <p>(2-S1-C3) PO4 Generate questions for possible future investigations based on the conclusions of the investigations.</p>	<p>Strand 2: Data Analysis Probability & Discrete Mathematics Concept 1: Data Analysis (Statistics) (M02-S2C1) PO 1. Formulate questions to collect data in contextual situations. PO 3. Interpret pictographs using terms such as most, least, equal, more than, less than, and greatest. PO 5. Formulate questions based on graphs, charts, and tables. PO 6. Solve problems using graphs, charts, and tables.</p>

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Investigation 1: SOLIDS

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
<p>Part 1: Introduce Solids cont.</p>	<p>Inquiry Process: (2-S1-C4) Communication: Communicate results of investigations.</p> <p>(2-S5-C1) Physical Science: Properties of Objects and Materials: Classify objects and materials by their observable properties.</p>	<p>(2-S1-C4) PO1 Communicate the results and conclusions of an investigation (e.g., verbal, drawn, or written). (See 2-S2-C1-02 and W-F5-01) (2-S1-C4) PO2 Communicate with other groups to describe the results of an investigation.</p> <p>(2-S5-C1) PO2 Classify materials as solids, liquids, or gases. (2-S5-C1) PO4 Demonstrate that solids have a definite shape.</p>	
<p>Part 2: Sort Solid Objects</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION In what ways are some solids the same?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN ¿En que maneras son iguales algunos sólidos?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S5-C1) Physical Science: Properties of Objects and Materials: Classify objects and materials by their observable properties.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO2 Classify materials as solids, liquids, or gases. (2-S5-C1) PO4 Demonstrate that solids have a definite shape.</p>	<p>Strand 4: Geometry & Measurement Concept 1: Geometric Properties (M02-S4C1) PO 1. Compare attributes.</p>
<p>Part 3: Construct with Solids</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION How can the properties of solids be used?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S2-C1) History & Nature of Science: History of Science as</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S2-C1) PO2 Identify science-related career opportunities.</p>	<p>Strand 2 Data Analysis, Probability & Discrete Mathematics Concept 1: Data Analysis (statistics) (M02-S2C1) PO 6. Solve problems using graphs, charts, & tables (Venn Diagrams)</p>

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Investigation 1: SOLIDS

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¿Cómo se pueden usar las propiedades de los sólidos?	Human Endeavor: Identify individuals and cultural contributions to scientific knowledge.		Stand 4; Geometry & Measurement (M02-S4C1) Concept 1: Geometric properties PO 1. Compare attributes.
Math Problem A	(2-S5-C1) Physical Science: Properties of Objects and Materials: Classify objects and materials by their observable properties.	(2-S5-C1) PO2 Classify materials as solids, liquids, or gases. (2-S5-C1) PO4 Demonstrate that solids have a definite shape.	Strand 4: Geometry & Measurement Concept 1: Geometric Properties (M02-S4C1) PO 1. Compare attributes.
Math Problem B	(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.	(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2	Strand 2 Data Analysis, Probability & Discrete Mathematics Concept 1: Data Analysis (statistics) (M02-S2C1) PO 6. Solve problems using graphs, charts, & tables (Venn Diagrams)
Science Stories: <i>Everything Matters</i>	(2-S5-C1) Physical Science: Properties of Objects and Materials: Classify objects and materials by their observable properties.	(2-S5-C1) PO2 Classify materials as solids, liquids, or gases. (2-S5-C1) PO4 Demonstrate that solids have a definite shape.	Stand 4: Geometry & Measurement (M02-S4C1) Concept 1: Geometric properties PO 1. Compare attributes. Concept 4: Measurement PO 6. Measure a given object using the appropriate unit of measure.

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Investigation 2: LIQUIDS

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
<p>Part 1: Liquids in Bottles</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION How do liquids differ from each other?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN ¿Cómo difieren unos líquidos de otros?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S5-C1) Physical Science: Properties of Objects and Materials: Classify objects and materials by their observable properties.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO2 Classify materials as solids, liquids, or gases. (2-S5-C1) PO3 Demonstrate that water can exist as a gas, liquid, solid. (2-S5-C1) PO4 Demonstrate that liquids take the shape of their containers.</p>	<p>Strand 2: Data Analysis, Probability & Discreet Mathematics. Concept 1: Data Analysis (statistics). PO 1. Formulate questions to collect data.</p> <p>Strand 3: Patterns, Algebra, Functions. Concept 4: Analysis of Change. PO 1. Identify change in a variable over time.</p>
<p>Part 2: Proprieties of Liquids</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION How do liquids differ from each other?</p> <p>¿Cómo difieren unos líquidos de otros?</p>	<p>(2-S5-C1) Physical Science: Properties of Objects and Materials: Classify objects and materials by their observable properties.</p> <p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p>	<p>(2-S5-C1) PO2 (2-S5-C1) PO3 (2-S5-C1) PO4</p> <p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p>	<p>Strand 2: Data Analysis, Probability & Discreet Mathematics. Concept 1: Data Analysis (statistics). PO 3. Interpret graph suing terms such as most, least, equal, more than, less than, & greatest.</p>
<p>Part 3: Liquid Levels</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION</p> <ul style="list-style-type: none"> • How do liquids flow when a bottle is tipped upside down? • How does the same amount of liquid look in various shapes of containers? 	<p>(2-S5-C2) Physical Science: Position & Motion of Objects: Understand spatial relationships and the way objects move.</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p>	<p>No PO's listed at this grade level.</p> <p>(2-S5-C1) PO 1,2,3,4</p>	<p>Strand 3: Patterns, Algebra & Functions. Concept 4: Analysis of change. PO 1. Identify change in a variable over time. PO2. Make simple predictions.</p>

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Investigation 2: LIQUIDS

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
<ul style="list-style-type: none"> In what ways are all liquids the same? <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN</p> <p>¿Cómo fluyen los líquidos cuando se voltea boca abajo una botella?</p> <p>¿Cómo se ve la misma cantidad de líquido en envases de diferentes formas?</p> <p>¿En qué forma son iguales todos los líquidos?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry</p> <p>Process: All four concepts covered and all POs.</p>	<p>(2-S1-C1) POs 1,2</p> <p>(2-S1-C2) POs 1,2,3,4</p> <p>(2-S1-C3) POs 1,2,3,4</p> <p>(2-S1-C4) POs 1,2</p>	<p>Stand 4: Geometry & Measurement. Concept 1: Geometric Properties.</p> <p>PO. 1. Compare attributes of 2 dimensional shapes.</p>
<p>Math Problem A</p> <p>Math Problem B</p> <p><i>Science Story: Solids & Liquids</i></p>	<p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p>	<p>(2-S5-C1) PO1 Describe objects in measurable terms. (See M02-S4-C4-01 & M02-S4C4-02)</p> <p>(2-S5-C1) PO2 Classify materials as liquids.</p> <p>(2-S5-C1) PO3 Demonstrate that water can exist as a gas, liquid, solid.</p> <p>(2-S5-C1) PO4 Solids have definite shape and liquids and gases take the shape of their containers.</p>	<p>Strand 1: Number Sense & Operations.</p> <p>Concept 3: Estimations.</p> <p>PO 2. Estimate the measurement of an object.</p> <p>PO3 compare an estimate to the actual measure.</p> <p>Concept 2: Numerical Operations.</p> <p>PO17. Add and subtract money.</p> <p>Strand 2: Data Analysis, Probability & Discrete mathematics. Concept 1: Data Analysis (Statistics).</p> <p>PO 4. Answer questions about a graph.</p>

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Investigation 3: BITS AND PIECES

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
<p>Part 1: Solids in Containers</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION Are these materials solids or liquids?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN Estos materiales - ¿Son sólidos o líquidos?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p> <p>(2-S5-C2) Physical Science: Properties of Objects & Materials; Understand spatial relationships and the way objects move.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO1 (2-S5-C1) PO2 (2-S5-C1) PO4</p> <p>No POs listed.</p>	<p>Strand 4: Geometry & Measurement. Concept 1; Geometric properties. PO 1. Compare attributes.</p>
<p>Part 2: Separating Solid Materials with Screens (Separating Soup Mix)</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION How can mixtures of solids particles be separated?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN ¿Cómo se pueden separar las mezclas de partículas sólidas?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all Pos.</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p> <p>(2-S5-C2) Physical Science: Properties of Objects & Materials; Understand spatial relationships and the way objects move.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO1 (2-S5-C1) PO2 (2-S5-C1) PO4</p> <p>No POs listed.</p>	<p>Strand 3: Patterns, Algebra & Function. Concept 3: algebraic representations. PO 1. Use variables in contextual situations.</p>

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Investigation 3: BITS AND PIECES

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
	(2-S3-C2) Science in Personal & Social Perspective: Science & Technology in Society	(2-S3-C2) PO3 Identify a simple problem that could be solved using a suitable tool.	
<p>Part 3: Solid Materials in Bottles</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION How do particles of solids move in bottles?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN ¿Cómo se muevan las partículas de los sólidos en las botellas?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO 1,2,3,4</p>	<p>Strand 3: Patterns, Algebra & Functions. Concept 4: Analysis of change. PO 1. Identify the change in a variable over time.</p>
<p>Part 4: Separating Beads with a Screen</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION How do you know which screens to use for separating a mixture of solids?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN ¿Cómo se sabe que tipo de criba usar para separar una mezcla de sólidos?</p>	<p>•Inquiry Process: All four concepts covered and all Pos. (2-S1-C1,C2,C3,C4)</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p> <p>(2-S5-C2) Physical Science: Properties of Objects & Materials; Understand spatial relationships and the way objects move.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO 1,2,3,4</p> <p>No POs listed.</p>	<p>Strand 3: Patterns, Algebra & Function. Concept 3: algebraic representations. PO 1. Use variables in contextual situations.</p> <p>Strand 4: Geometry & Measurement. Concept 1; Geometric properties. PO 1. Compare attributes.</p>

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Investigation 3: BITS AND PIECES

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
	(2-S3-C2) Science in Personal & Social Perspective: Science & Technology in Society.	(2-S3-C2) PO3 Identify a simple problem that could be solved using a suitable tool.	
Math Problem <i>Science Story: Solids To Liquids and Back Again</i>	(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.	(2-S5-C1) PO 1,2,3,4	Strand 1: Number Sense & Operations. Concept 3: Estimation. PO 2 Estimate the measurement of an object. PO3. Compare an estimate to the actual measure.

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Investigation 4: SOLIDS AND LIQUIDS WITH WATER

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
<p>Part 1: Solids and Water</p> <p>Session 1: Mixing Solids with Water</p> <p>Session 2: Separating Mixtures</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION</p> <ul style="list-style-type: none"> • What happens when different solids are mixed with water? • How can a mixture of water and solids be separated? <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN</p> <ul style="list-style-type: none"> • ¿Qué sucede cuando diferentes sólidos se mezclan con agua? • ¿Cómo se puede separar una mezcla de agua y sólidos? 	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO 1,2,3,4</p>	<p>Strand 2: Data Analysis, Probability & Discrete mathematics. Concept 1: Data Analysis (Statistics). PO 6. Solve problems using graphs.</p> <p>Strand 3: Patterns, Algebra & Functions. Concept 4: Analysis of change. PO 1. Identify the change in a variable over time. PO 2. Make predictions.</p> <p>Strand 4: Geometry & Measurement. Concept 4: Measurement—units of measurement PO6. Measure a given object using appropriate unit of measure.</p>
<p>Part 2: Liquids and Water</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION</p> <p style="color: blue;">What happens when water is mixed with different liquids?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN</p> <p>¿Qué sucede cuando el agua se mezcla con líquidos diferentes?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p>	<p>(2-S1-C1) POs 1,2. (2-S1-C2) POs 1,2,3,4. (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2.</p> <p>(2-S5-C1) PO 1,2,3,4</p>	<p>Strand 3: Patterns, Algebra & Functions. Concept 4: Analysis of change. PO 1. Identify the change in a variable over time. PO 2. Make predictions.</p>

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Investigation 4: SOLIDS AND LIQUIDS WITH WATER

Lessons and Objective Question(s)	Strand and Concepts	Performance Objective	Math Standards & PO's
<p>Part 3: Toothpaste Investigation</p> <p style="color: blue;">LESSON OBJECTIVE QUESTION Is toothpaste a solid, a liquid, a mixture, or some other form of matter?</p> <p>PREGUNTA DEL OBJETIVO DE LA LECCIÓN La pasta dental -- ¿Es un sólido, un líquido, una mezcla, u otra forma de la materia?</p>	<p>(2-S1-C1,C2,C3,C4) Inquiry Process: All four concepts covered and all POs.</p> <p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p> <p>(2-S3-C2) Science in Personal and Social Perspectives: Science & Technology; Understand the impact of technology.</p>	<p>(2-S1-C1) POs 1,2 (2-S1-C2) POs 1,2,3,4 (2-S1-C3) POs 1,2,3,4 (2-S1-C4) POs 1,2</p> <p>(2-S5-C1) PO 1,2,3,4</p> <p>(2-S3-C2) PO1 Analyze how various technologies impact aspects of people's lives. (2-S3-C2) PO3 Identify a simple problem could be solve using a suitable tool.</p>	<p>Strand 3: Patterns, Algebra & Functions. Concept 4: Analysis of change. PO 1. Identify the change in a variable over time. PO 2. Make predictions.</p>
<p>Math Problem</p> <p style="color: green;"><i>Science Story: Mix It Up!</i></p>	<p>(2-S5-C1) Physical Science: Properties of Objects & Materials; Classify objects by the observable properties.</p>	<p>(2-S5-C1) PO 1,2,3,4</p>	<p>Strand 1; Number Sense & Operations. Concept 2: Numerical operations. PO7 Select the grade level appropriate operation to solve work problems. PO 9. Count by multiples.</p> <p>Strand 4: Geometry & Measurement. Concept 4: Measurement—units of measurement PO 3. Tell time to the quarter hour.</p>