

Lesson Title	Teaching Machines to Learn <a href="#">TCEA AI Literacy Framework</a>
Objectives	Explain what machine learning is in simple terms
	Understand the concept of training data and its importance
	Recognize patterns in data
	Make simple predictions based on patterns
Overview	This lesson introduces students in grades 3-5 to basic concepts of machine learning, focusing on training data, patterns, and predictions. Through hands-on activities and discussions, students will gain an understanding of how machines learn from data to make predictions.
Materials	Assorted fruit (or pictures of fruit) with various characteristics (color, shape, size)
	"Fruit Classifier" worksheet (see below for design)
	Colored markers or pencils
	Whiteboard and markers
	Optional: Computer with internet access for showing a simple ML demo
Lesson Steps	<p>1. Introduction (10 minutes)</p> <ul style="list-style-type: none"> <li>- Begin with a brief discussion: "What does it mean to learn something?"</li> <li>- Introduce the idea that machines can also learn, but they learn from data.</li> <li>- Explain that today, we'll be learning about how machines learn to recognize patterns and make predictions.</li> </ul>
	<p>2. Activity: "Fruit Classifier" (25 minutes)</p> <p>a. Divide the class into small groups.</p> <p>b. Give each group a set of assorted fruit (or fruit pictures) and a "Fruit Classifier" worksheet (<a href="https://docs.google.com/document/d/11c1iV67mC19DaNhcdKVVU_A5Yww3Z8XQeii0gUjpDWU/edit?usp=sharing">https://docs.google.com/document/d/11c1iV67mC19DaNhcdKVVU_A5Yww3Z8XQeii0gUjpDWU/edit?usp=sharing</a>).</p> <p>c. Explain that they will be "training" a machine to classify fruits:</p> <ul style="list-style-type: none"> <li>- First, they need to create "training data" by filling out the worksheet with characteristics of each fruit.</li> <li>- Then, they'll look for patterns in their data.</li> <li>- Finally, they'll use these patterns to make predictions about new fruits.</li> </ul> <p>d. After completing the worksheet, discuss as a class:</p>

	<ul style="list-style-type: none"> <li>- What patterns did you notice?</li> <li>- How could you use these patterns to predict what a new fruit might be?</li> </ul>
	<p>3. Mini-Lecture: Machine Learning Concepts (10 minutes)</p> <ul style="list-style-type: none"> <li>- Explain how the activity relates to machine learning:</li> <li>- Training Data: The information we gathered about each fruit</li> <li>- Patterns: The common characteristics we found for each type of fruit</li> <li>- Predictions: Using the patterns to guess what a new fruit might be</li> <li>- Discuss how real machine learning systems use much more data and complex patterns</li> </ul>
	<p>4. Demonstration: Real-world ML (10 minutes)</p> <ul style="list-style-type: none"> <li>- If possible, show a simple online machine learning demo (such as <a href="https://www.youtube.com/watch?v=f_uwKZIAeM0">https://www.youtube.com/watch?v=f_uwKZIAeM0</a> or <a href="https://www.youtube.com/watch?v=ZdaVXyan8GM">https://www.youtube.com/watch?v=ZdaVXyan8GM</a>)</li> <li>- Discuss how the demo relates to the concepts learned in class</li> </ul>
	<p>5. Wrap-up and Reflection (5 minutes)</p> <ul style="list-style-type: none"> <li>- Recap the main concepts: training data, patterns, and predictions</li> <li>- Ask students to share one thing they learned about machine learning</li> </ul>
<b>Extension</b>	Create a "Guess the Animal" game using the same principles of classification
	Explore simple online machine learning tools designed for kids
<b>Assessment</b>	<ul style="list-style-type: none"> <li>- Review completed "Fruit Classifier" worksheets</li> <li>- Observe student participation in discussions</li> <li>- Optional: Short quiz on basic machine learning terms</li> </ul>