

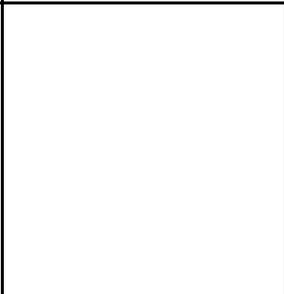
 <p>MEDIA ARTS</p>	<h2 style="text-align: center;">TinkerCAD Creatures</h2> <h3 style="text-align: center;">3rd Grade</h3> <p style="text-align: center;"><i>Students use TinkerCAD, a free 3D modeling software, to prototype a concept model of a new mythical creature using the constraint of using only 3D primitive shapes.</i></p>
Lesson Objective(s):	Student Friendly Standard Learning Statement(s): <ul style="list-style-type: none"> • I am learning how to organize and use vocabulary to describe media arts productions. • I am learning how to organize 3D models and use vocabulary to describe 3D modeling and prototyping.
Arts Standard(s):	Artistic Process – Creating Anchor Standard # 3 – Refine and complete artistic work <ul style="list-style-type: none"> ○ (MA.CR.3.3a) Construct and order various content into unified, purposeful media arts, productions, describing, and applying a defined set of principles (e.g., movement, force).
Essential Question(s):	<i>How are creativity and innovation developed within and through media arts productions? How do media artists use various tools and techniques?</i>
Vocabulary:	<p>NCCAS: Prototyping: <i>creating a testable version, sketch, or model of a media artwork, such as a game, character, website, application etc.</i> Concept model: <i>creating a digital or physical representation or sketch of an idea, usually for testing, prototyping.</i> Constraints: <i>Limitations on what is possible, both real and perceived</i> Context: <i>the situation surrounding the creation or experience of media artworks that influences the work, artist, or audience. This can include how, where, and when media experiences take place, as well as additional internal and external factors (personal, societal, cultural, historical, physical, virtual, economic, systemic, etc)</i></p>
Lesson Procedure: (60-75 minutes)	Introduction and Prior Steps <p>Students have already discussed fictional/mythical creatures in storybooks, games, and movies and considered existing examples and how these creatures are made, environmental context such as land, water, habitat, and similarities between related or family creatures, such as evolved Pokémon (see science standards for inherited traits). Our creative constraint is to use only 3D Primitive shapes (only cubes, prisms, spheres, pyramids, and cones, to create a new creature). Students watched the Inside Out clip about Abstract Thought and looked at the different art styles that are in the progression that Joy and Sadness and Bing Bong go through. We are focusing on the art style in the first stage. The Pixar creators chose to visualize abstract thought using combinations of primitive shapes.</p> <p>Preparation: use pencil and paper to sketch a new creature and decide on its major characteristics such as size, body shape and appendages, its name, and its native environment (water, land, city, jungle, etc).</p>

	<p>Activity / Procedure</p> <p>Teacher demonstrates / guided practice: How to turn sketches into a digital model using TinkerCAD 3D Design software (browser-based, free, mac, windows and chromebook compatible). Demonstrate resizing canvas, resizing objects, grouping objects, using “hole” to group objects, moving the camera zoom and perspective.</p> <p>Students then use 1:1 computers to turn their sketch into a digital model in TinkerCAD.</p> <p>Extension: have the students write a story about the traits and habitat of their creature (What does it eat? Where does it live? How many siblings does it have? Does it talk, read, or write?)</p>
<p>Assessments:</p>	<p>Checking for understanding: Did students use any shapes other than primitives? Did they use “group” to create one whole creature?</p> <p>End of Lesson: Students share their digital creations with a small group of peers at tables. The teacher can highlight a few students to the whole class using the built-in TinkerCAD classroom features that give teachers access to student work. <i>Can students talk about how the creative constraint of 3D primitives made their work harder or easier?</i> <i>Can students talk about how all student creations go together because they are created using only 3D primitives (applying a defined set of principles)</i></p>
<p>Related Standards/ Competencies:</p>	<p><i>2nd grade math standard: 2.g.A.1: Identify and describe specified attributes of two-dimensional and three-dimensional shapes, according to the number and shape of faces, number of angles, and the number of sides and/or vertices.</i></p> <p><i>Science standards (NGSS science standard) 3-LS3.1 inherited traits from parents 3.ls4.3 biological diversity</i></p>
<p>Resources:</p>	<p>TinkerCAD sign-up link https://www.tinkercad.com More TinkerCAD free lessons: https://www.tinkercad.com/lessonplans</p>

Appendix 1: Student worksheet

3D primitive creatures

Design a new mythical creature. Your design **constraint** (rule) is that you may only 3D primitive shapes [cube/rectangular prism, sphere, triangular prism, pyramid, cylinder].

<p>Draw a prototype of your creature here:</p>	<p>list the 3D primitive shapes you use:</p>
	

Answer the following:

What is your creature's name and age? _____

Describe its native habitat (ex. ocean, jungle, caves, alien planet, mountains etc):

Describe its shapes (does it have legs, arms, scales, toes?)

Create your 3D prototype using TinkerCAD! When you're finished, answer the following:

Compare your creature to a classmate's. What is similar and what is different?

SAMPLE