ARIZONA DEPARTMENT OF EDUCATION

Sample Lesson Plan – Media Arts

Tinkercad Creations

Grade 3

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.

Lesson Objectives	**Student Friendly Standard Learning Statement(s):** • 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 Standards	**Artistic Process: Creating** **Anchor Standard 3:** Refine and complete artistic work • (MA:3.Cr3.a) - Construct and order various content into unified, purposeful media arts productions, describing and applying a defined set of principles (such as movement and force).
Essential Questions	*How are creativity and innovation developed within and through media arts productions?* *How do media artists use various tools and techniques?*
Vocabulary Source: NCCAS Glossary	**Prototyping:** Creating a testable version, sketch, or model of a media artwork, such as a game, character, website, application, etc. **Concept model:** Creating a digital or physical representation or sketch of an idea, usually for testing, prototyping. **Constraints:** Limitations on what is possible, both real and perceived **Context:** 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.)
Lesson Procedure Duration: 60-75 minutes	**Prior Steps** Students have already discussed fictional/mythical creatures in storybooks, games, and movies. They have considered how these creatures are made, environmental context (such as habitat), and similarities between related or family creatures, such as evolved Pokémon (see science standards for inherited traits). Students watched the Inside Out clip about Abstract Thought and looked at the progression of art styles that Joy, Sadness and Bing Bong go through. The Pixar creators chose to visualize abstract thought using combinations of primitive shapes. Our creative constraint for this project will be to create a mythical creature using only 3D Primitive shapes like in the first stage – cubes, prisms, spheres, pyramids, and cones.

	Preparation: On the *3D Primitive Creatures Worksheet* below, sketch a new creature and decide on its major characteristics such as size, body shape and appendages, name, and habitat. **Activity/Procedure** Teacher demonstrates / guided practice: How to turn sketches into a digital model using Tinkercad 3D Design application (free, browser-based, Mac, Windows, and Chromebook compatible). Demonstrate resizing canvas, resizing objects, grouping objects, using "Bundle Group" to group objects, moving the camera zoom and perspective. Students then use 1:1 computers to turn their sketch into a digital model in Tinkercad. **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?)
Assessment	**Checking for Understanding:** Ensure students are only using 3D primitives, and that they use the "Bundle Group" function to create a whole creature. **End of Lesson**: Students share their digital creations with a small group of peers at tables, describing their 3D primitive representation of the creature and its major characteristics. They may share how the creative constraint impacted their creative process.
Related Standards	**Math** 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. **Science** (NGSS) 3-LS3.1 inherited traits from parents 3.ls4.3 biological diversity
Resources	Tinkercad https://www.tinkercad.com Tinkercad free lessons: https://www.tinkercad.com/lessonplans

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.

Draw a prototype of your creature here:	List the 3D primitive shapes you used:

What is your creature's name and age? _____

Describe your creature's native habitat (ocean, jungle, cave, alien planet, mountains, etc.):

_____

_____

Describe your creature's size, shape, skin texture, and appendages (arms, legs, tail):

_____

_____

Create a 3D prototype of your creature using Tinkercad! When you are finished, answer the following:

Compare your 3D prototype to your drawing above. How are they different?

_____

_____