Khaled bin Sultan Living Oceans Foundation

STANDARDS

- **CCSS**: RST.9-10.2, 4, 5, 7, 8, 9, 10; RST.11-12.2, 4, 8, 10; SL.9-10.4; SL.11-12.4
- **NGSS**: HS-LS1-1
- **OLP**: 5.C.22

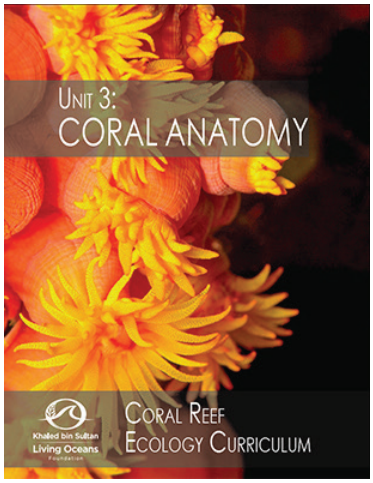
ONLINE CONTENTS

- Coral Anatomy Quiz
- *Coral Anatomy* Interactive (at bottom of *Coral Anatomy* section) Use the interactive program to learn and explore more about the anatomy of a stony coral polyp.
- *What Are Corals?* Video Corals are animals. An individual coral's body, called a polyp, is mostly stomach, with a mouth on top. Its mouth is ringed with tentacles - but these just aren't any tentacles, they're lined with stinging cells, some filled with venom (neurotoxins) that paralyze their prey.
- *Form Fits Function* Video Ever heard the phrase form fits function? It's when the shape of something is designed for the job it is supposed to do. When applied to sea creatures it means their body parts are a good match for their role in the animal's survival.

CORAL ANATOMY

This lesson is a part of the *Coral Anatomy* unit, which explains some of the characteristics and structures of corals, and how they function. Below is a summary of what is included in the entire unit.

UNIT CONTENTS



A. Background Information
   - Coral Anatomy
   - Form Fits Function

B. Lessons

Watch it! What Are Corals?
- A worksheet to accompany the *What Are Corals?* video

Watch it! Form Fits Function
- A worksheet to accompany the *Form Fits Function* video

Interactive Coral Polyp
- A worksheet to label the structures of a coral polyp and describe their function

Fitting the Function
- A crossword puzzle to match the coral structures to their function

Coral Anatomy Quiz
- A matching quiz to match the coral structures to their function

Coral Polyp Eco-Art
- An art project to design and build a coral polyp using recycled materials

Form Fits Function
- A lesson to design a poster of any plant or animal, labeling the parts and their functions

Read it! Swimming Among Soft Corals
- A worksheet to accompany the *Swimming Among Soft Corals of the Great Barrier Reef* field blog

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LESSON 3 TEACHER'S NOTES

AUTHOR

- Amy Heemsoth, Khaled bin Sultan Living Oceans Foundation

LEARNING OBJECTIVE

- Understand that structure is directly related to the function that it performs.

KEYWORD

- Form Fits Function

MATERIALS

- 22 inches x 28 inches (56 cm x 71 cm) poster board
- Other materials are dependent on method used to create poster.
- **Watch It! Form Fits Function** student worksheet.
- **Lesson 3: Form Fits Function** student worksheet

INTEGRATING SUBJECTS

- Art
- Public speaking

EVALUATION

- See *Grading Rubric* for activity evaluation.

STANDARDS

- **CCSS**: RST.9-10.4, 5, 7; RST.11-12.4; W.9-10.2, 4, 7, 8; W.11-12.2, 4, 7, 8; SL.9-10.4, 6; SL.11-12.4, 6
- **NGSS**: HS-LS1-1
- **OLP**: 5.C.22

PROCEDURE

1. Watch *Form Fits Function* YouTube video (*https://youtu.be/oDDaVcTh8ZQ*) and answer questions on the **Watch It! Form Fits Function** student worksheet.
2. Teach *Background Information* section *B) Form Fits Function*.
3. Hand out **Lesson 3: Form Fits Function** student worksheet. NOTE: This student guided assignment can be used as a reinforcement activity inside or outside of the classroom or even in a flipped classroom assignment.
4. Explain the procedure located on the student worksheet.
5. Review the grading rubric with students.

Name: _____ Date: _____

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LESSON 3 FORM FITS FUNCTION

OBJECTIVE: Understand that structure is directly related to the function that it performs.

You have learned that form fits function. Now it's your turn to provide examples of form fits function. For this activity you will create a poster.

PART A:

INSTRUCTIONS:

1. Choose a plant or an animal.
2. Create a poster.
3. Graphics can be handcrafted, digitally created, or borrowed from other sources. If you are using graphics from other sources, you need to make sure that they are cited below the borrowed graphic.
4. Label 20 different structures. Remember these can be external or internal structures.
5. Write the function of each structure that you labeled.

See the attached rubric for grading.

PART B:

INSTRUCTIONS:

1. Students will give a short classroom presentation.
2. The student will identify the organism chosen and one fact that they learned.
3. Students will then be asked questions about the poster. See rubric for grading.

GRADING RUBRIC:

Name: _____ Date: _____ Score: _____

Category	4	3	2	1	Score
Graphics – Clarity	Graphics are all in focus and the content easily viewed and identified from 6 feet (1.8 m) away.	Most graphics are in focus and the content easily viewed and identified from 6 feet (1.8 m) away.	Most graphics are in focus and the content is easily viewed and identified from 4 feet (1.2 m) away.	Many graphics are not clear or are too small.	
Graphics – Relevance	All graphics are related to the topic and make it easier to understand. All borrowed graphics have a source citation.	All graphics are related to the topic and most make it easier to understand. All borrowed graphics have a source citation.	All graphics relate to the topic. Most borrowed graphics have a source citation.	Graphics do not relate to the topic OR several borrowed graphics do not have a source citation.	
Labels	All structures are clearly labeled with labels that can be read from at least 3 feet (.9 m) away.	15-19 structures are clearly labeled with labels that can be read from at least 3 feet (.9 m) away.	8-14 structures are clearly labeled with labels that can be read from at least 3 feet (.9 m)away.	Labels are too small to view OR less than 8 structures are labeled.	
Content – Accuracy	All structures have accurate functions displayed on the poster.	15-19 accurate functions are displayed on the poster.	8-14 accurate functions are displayed on the poster.	Less than 8 accurate functions are displayed on the poster.	
Knowledge Gained	Student can accurately answer all questions related to facts in the poster and processes used to create the poster.	Student can accurately answer most questions related to facts in the poster and processes used to create the poster.	Student can accurately answer about 75% of questions related to facts in the poster and processes used to create the poster.	Student appears to have insufficient knowledge about the facts or processes used in the poster.	
Delivery	Excellent and clear verbal articulation of ideas.	Explained ideas well.	Ideas were well stated, but lacked some clarity.	Ideas were difficult to understand.	
Attractiveness	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout and neatness.	The poster is acceptably attractive, though it may be a bit messy.	The poster is distractingly messy or very poorly designed. It is not attractive.	
Grammar/ Spelling	There are no mistakes on the poster.	There are 1-3 mistakes on the poster.	There are 4-6 mistakes on the poster.	There are more than 6 mistakes on the poster.	
TOTAL				**Out of 32:**	