

LIFE IN THE DEEP SEA

Materials

1. Engage – So you Want to be a Deep Sea Explorer?

- Computer with Internet connection.
- Projection screen
- Attendee Binders (25-32)
- 13 pieces cardstock, cut in thirds
- 10 pieces cardstock – station labels
- 18+ markers
- 6 sharpies
- 1 roll masking tape

2. Explore – Lab Stations

Station A – The Wonders of Water	Materials	Source	Cost
A-1 H2O	1 Clear plastic glass with water	Walmart	\$.99
	1 large box of Kosher Salt	Publix	\$1.89, 1 lb
	1 Spoon	Biodegradablestore.com	\$6.95, 50 count
	1, 9-volt battery	Walmart	\$5.97, 2-pack
	2 wooden pencils	Amazon	\$9.90, 144 count
A-2 Density & Salinity	3 clear plastic glasses	Walmart	\$.99, ea.
	1 large box of Kosher salt	Publix	\$1.89, 1 lb
	1 Plastic Spoon	Biodegradablestore.com	\$6.95, 50 count
	2 raw eggs	Publix	\$.88, dozen
	1 tray to catch water		
	1 bucket	Walmart	\$ 2.50
	2 L bottle of water	recycled	
A-3 Density & Temperature	Large clear bowl or tank with warm water	Walmart	\$3.89, 1 large bowl
	Blue food coloring	Publix	\$2.89, 1 oz.
	Ziplock bag or small dish with 1 cup of frozen water with food coloring	Publix	\$2.33, 120 count
	Thermometer	K-mart	\$6.00, mercury free

Station B: Animal Ad-	Materials	Source	Cost
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aptations to Life in the Deep Sea – Using bio-luminescence to survive.			
Deep Sea Organisms	Images of Deep Sea organisms	ORCA	Free
	Specimens, Images	Provided by ORCA for workshop only.	

Station C: Changes with Depth – Pressure	Materials	Source	Cost
C-1 Pressure Demo.	2, 5 gallon buckets	Home Depot	\$7.00, 3-pack
	Tarp	Walmart	\$1.99, 5 x 7
	2 L bottle of tap water	Publix	\$.79
	Pressure demo. tube	www.Wardsci.com	\$21.25
	1 tub to capture water	Walmart	\$5.00

Station D: Changes with Depth – What is Light?	Materials	Source	Cost
D-1 Incandescent Light	1 Lamp	Walmart	\$9.99
	1 Incandescent bulb	Publix	\$1.00
D-2 Fluorescence	1 Black light	www.puttyworld.com	\$5.95, 1 keychain
	1 Fluorescent clay	www.sciplus.com	\$4.50, 4 colors
	6 Highlighters	Walmart	\$4.00, multi 4-pack
D-2 Phosphorescence	Phosphorescent putty	www.puttyworld.com	\$11.00, ea
	Multi- color flashlight	www.sciplus.com	\$8.50
D-2 Phosphorescence	Black light	www.puttyworld.com	\$5.95, 1 keychain
D-3 Chemiluminescence – Light Sticks	1 red, 1 blue light stick	Glowstickfactory.com	\$6.95, 10 count
D-3 Hot/Cold Demo.	2 green light sticks	Glowstickfactory.com	\$6.95, 10 count
	2 containers to submerge lights	Walmart	\$.99, ea.
D-4 Bioluminescence	Dinoflagellate culture	Sunnyside sea farms www.seafarms.com	\$6.00, 50 ml

Station E: Changes with Depth – Light in the Ocean	Materials	Source	Cost
E-1 Light Bottles	4, 2-liter plastic clear bottles	Publix	\$.79, ea.
	Blue food coloring	Publix	\$2.89, 1 oz.
	½ tsp measuring spoon	Walmart	\$6.00, set
	Milk or powdered cream	Walmart	\$3.00
	flashlight	Walmart	\$10.00
	Light stick (1 blue, 1 red)	Glowstickfactory.com	\$6.95, 10 count
	2 feet of string		
E-2 Challenges of the Deep Video	Challenges of the Deep Video and A/V equipment	Video Supplied	Free

3. Explain – Dr. Widder

- Computer with Internet connection. See COSEE Florida webpage for download.
- Projection screen

4. Elaborate – Lesson Planning

- 1 Globe
- 6 Giant Post-it Pads
- 18 Markers
- Attendee binders with student handouts to all labs used (from morning activity)
- 15 computers with internet access to www.coseeflorida.org/

Procedure

Pre-workshop Planning (1 day)

1. Gather and order materials for lab stations
2. Test out labs
3. Set up lab five stations, A-E with labels (see individual handouts in the Appendix for details on each station.)
4. Set up other workshop materials and binders.

Explore Procedure (60 minutes)

1. Introduce lab stations
2. Put teachers in six groups of five
3. Provide a visual timer and bell to announce the end of 10 minutes.
4. Instruct teachers to rotate in alphabetical order.
5. Monitor progress at stations as teachers rotate

Elaborate – Lesson Planning (2.5 hours)

1. Introduce lesson plan format & COSEE Florida website resource page
2. Distribute brainstorm materials
3. Teachers choose groups and start working
4. Brainstorm – 15 minutes
5. Research – 30 minutes
6. Input lesson plan into lesson plan template – 45 minutes
7. Present lesson plan to group – 30 minutes (3-5 minute presentations)