

Dan Wyrick's Science QUEST Labs

Science Explorations - Life Science

LAB TITLE	OBJECTIVE	OVERVIEW	CALIFORNIA SCIENCE CONTENT STANDARD
LAB #1 Observe It!	<ol style="list-style-type: none"> 1. Define observation. 2. Describe how scientific observation differs from general observations. 3. Identify characteristics used in observation. 	Students learn how scientists use observation to learn about the natural world. Students get practice making scientific observations by observing gummi worms and living night crawlers.	3 rd - 5a, 3a, 3c 4 th - 6a, 6b, 6f 5 th - 6f, 6g, 6h, 6i
LAB #2 It's All in the Swing	<ol style="list-style-type: none"> 1. Define pendulum, period, and variable. 2. Compare and contrast the effects of variables on an event. 3. Distinguish between independent and dependent variables. 	Students learn about pendulums. Investigation focuses on several variables including release angle, mass, and length. Analysis of the collected data allows students to reach a conclusion supported by the data.	3 rd - 5a,5c,5d 4 th - 6c, 6d, 6e, 6f 5 th - 6c, 6b, 6c, 6d, 6e, 6f, 6g, 6h, 6i
LAB #3 The Microscope	<ol style="list-style-type: none"> 1. Identify the parts of a microscope. 2. Describe proper care and use of a microscope. 3. Make observation using a microscope. 	Students observe a microscope and identify its parts and the function of each part. They learn the proper care and use of a microscope. Finally they use a microscope to make observations.	3 rd - 5a, 6b 4 th - 6a, 6f 5 th - 6a, 6g, 6i
LAB #4 Living Factories	<ol style="list-style-type: none"> 1. Define what a cell is. 2. Identify the main parts of the cell. 3. Describe the function of each part of the cell. 4. Distinguish between plant and animal cells. 	Students study living and preserved cells using a microscope and learn how to prepare microscope slides for viewing. Students distinguish between animal and plant cells and produce drawings of cells they observe.	3 rd - 3a 4 th - 4d, 6a, 6e 5 th - 2f, 2g, 6a, 6g, 6i
LAB #5 A Light Diet	<ol style="list-style-type: none"> 1. Describe photosynthesis. 2. Identify where in the plant photosynthesis takes place. 3. Identify the reactants and products of photosynthesis. 	Students learn about photosynthesis by conducting an experiment where they make quantitative comparisons of plants that are grown in the presence of light and plants that are grown in darkness.	3 rd - 3a, 5a, 5c, 5d, 5e 4 th - 2a, 6a, 6b, 6d, 6e, 6f 5 th - 2a, 2e, 2f, 2g, 6d, 6e, 6f, 6g, 6h, 6i

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LAB #6 I'm Having a Breakdown	<ol style="list-style-type: none"> 1. Identify the parts of the digestive system. 2. Describe the function of each part of the digestive system. 3. Follow the path of food as it moves through the alimentary canal. 	Students study investigate the digestive system learning the parts and their function. Students conduct an experiment to see the breakdown of starch to sugar in order to understand how digestion occurs in the body.	3 rd - 3a, 5a, 5c, 5d 4 th - 6d, 6e, 6f 5 th - 2a, 2c, 2g, 6d, 6e, 6f, 6g, 6h, 6i
LAB #7 RU the Right Type?	<ol style="list-style-type: none"> 1. Identify the parts of the circulatory system. 2. Describe the path blood follows as it moves through the circulatory system.. 3. Identify the types of blood. 	Students study the circulatory system, the parts that make it up and the function of these parts. Students examine a preserved heart and perform an experiment to learn about blood types.	3 rd - 5a, 5c, 5d, 4 th - 6d, 6f 5 th - 2a, 2b, 6d, 6e, 6f, 6g, 6h, 6i
LAB #8 Classify It!	<ol style="list-style-type: none"> 1. Define classification. 2. Explain how animals are classified. 3. Identify the 7 levels of classification. 	Students learn how scientists classify living things and become acquainted with the levels used in biological classification. Concepts are reinforced by actual experience in classification.	3 rd - 5a, 5b 4 th - 6a, 6f 5 th - 6a, 6g, 6h, 6i
LAB #9 Stories in Stone	<ol style="list-style-type: none"> 1. Define what a fossil is. 2. Identify the types of fossils. 3. Describe how fossils form. 4. Explain what fossils can tell us. 	Students learn about the geologic record. In this activity students learn about fossils and what they can teach us about the geologic past. Students actually prepare a fossil that they can take home.	3 rd - 3d, 3e, 5c 4 th - 6a, 6f 5 th - 6g, 6h, 6i
LAB #10 Take-A-Part Squid	<ol style="list-style-type: none"> 1. Identify the characteristics of mollusks. 2. Describe the several groups of mollusks. 3. Describe adaptations that help squid survive in the ocean. 	Students learn about mollusks and their characteristics. Living and preserved mollusks are examined to facilitate student understanding.	3 rd - 3a, 3b, 5c 4 th - 2b, 6b, 6f 5 th - 2a, 6a, 6f, 6hi, 6i

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LAB #11 Ghost Shrimp	<ol style="list-style-type: none"> 1. Identify the characteristics of arthropods 2. Describe several groups of arthropods. 3. Describe the adaptations that help a ghost shrimp survive. 	Students learn about arthropods and their characteristics. Living and ghost shrimp are examined to facilitate student understanding.	3 rd - 3a, 3b, 5c 4 th - 2b, 6b, 6f 5 th - 2a, 6a, 6f, 6g, 6h, 6i
LAB #12 Food Tools	<ol style="list-style-type: none"> 1. Describe the characteristics of birds. 2. Describe beak adaptations of birds. 3. Describe foot adaptations of birds. 4. Explain the relationship between structure and function in bird beaks. 	Students examine the characteristics of birds and study the adaptations birds have that enable them to fly. Students participate in an experiment to learn the relationship between beak structure and food gathering.	3 rd - 3a, 3c, 5a, 5c, 5e 4 th - 2b, 3b, 6a, 6c, 6d, 6e, 6f 5 th - 2a, 6c, 6d, 6e, 6g, 6h, 6i
LAB #13 Baggie Ecosystem	<ol style="list-style-type: none"> 1. Distinguish between an ecosystem and a biome. 2. Describe the living and non-living parts of an ecosystem. 3. Define: producer, consumer and decomposer. 	Students study learn about ecosystems and biomes by constructing a simple ecosystem in a recloseable plastic bag. Students identify the living and non-living components and observe the health of the ecosystem over time	3 rd - 3b, 3c, 3d, 5b, 5e 4 th - 2a, 2b, 2c, 3a, 3b, 6a, 6f 5 th - 2f, 2g, 6g, 6h, 6i
LAB #14 RU in the Zone?	<ol style="list-style-type: none"> 1. Describe the modes of ocean life. 2. Identify the regions of the ocean. 3. Define what a tide pool is. 4. Describe the zones in a tide pool. 5. Identify common tide pool animals. 	Students learn about the life that makes up the sea. They investigate the various regions of the ocean. Special emphasis is given to the intertidal region and students experiment to discover where intertidal animals live.	3 rd - 3a, 3b, 3c 4 th - 2a, 2b 3a, 3b, 6f 5 th - 6i
LAB #15 Hey, Whatcha Eat'n?	<ol style="list-style-type: none"> 1. Identify adaptations that distinguish the birds of prey. 2. Distinguish between a food chain and a food web. 3. Create a diagram that shows a food web that would include an owl. 	Students learn about birds of prey and their special designs. Owl pellets are dissected to facilitate understanding of the importance of birds of prey.	3 rd - 3a; 5b,e 4 th - 2a,b; 3c; 6e,f 5 th - 6g, 6h, 6i