

Oregon State Science Standards

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| | |
|------------------------------------|--------|
| Bend a Carrot | p.C-1 |
| Big Things Come in Little Packages | p.A-1 |
| Choose Your Ooze | p.F-1 |
| Cleaning with Dirt | p.D-1 |
| Color Me Blue | p.B-1 |
| Density Rainbow | p.A-11 |
| DNA Extraction | p.C-19 |
| Dye Detective | p.G-1 |
| Foam Peanuts | p.D-15 |
| Inner Space | p.A-35 |
| Kool Colors | p.E-1 |
| Latent Prints | p.G-23 |
| Lost Labels | p.G-37 |
| Matter of Degree | p.A-49 |
| Odors Aloft | p.E-19 |
| Of Cabbages and Kings | p.B-17 |
| Penny for Your Thoughts | p.F-23 |
| Pollution Diffusion | p.D-29 |
| Reaction: Yes or No? | p.B-37 |
| Sailing Out | p.A-65 |
| Sticky Situation | p.F-37 |

Interaction and Change (continued)

Earth and Space Science

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|--------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 7.2E.1 | Describe and evaluate the environmental and societal effects of obtaining, using, and managing waste of renewable and non-renewable resources. | | | | | | | | | | | | | | | | | | | |
| 7.2E.3 | Evaluate natural processes and human activities that affect global environmental change and suggest and evaluate possible solutions to problems. | | | | | | | | | | | | | | | | | | | |
| H.2E.4 | Evaluate the impact of human activities on environmental quality and the sustainability of Earth systems. | | | | | | | | | | | | | | | | | | | |
| H.2E.4 | Describe how environmental factors influence resource management. | | | | | | | | | | | | | | | | | | | |

Scientific Inquiry

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|--------|--|-----------|---------|-------|---------|-----------|-----------|---------|---------|---------|---------|---------|-----------|---------|-------|-----------|-------|---------|---------|-----------|
| K.3S.1 | Explore questions about living and non-living things and events in the natural world. | | | | | | | | | | | | | | | | | | | |
| K.3S.2 | Make observations about the natural world. | | | | | | | | | | | | | | | | | | | |
| 1.3S.1 | Identify and use tools to make careful observations and answer questions about the natural world. | | | | | | | | | | | | | | | | | | | |
| 1.3S.2 | Record observations with pictures, numbers, or written statements. | | | | | | | | | | | | | | | | | | | |
| 1.3S.3 | Describe why recording accurate observations is important in science. | | | | | | | | | | | | | | | | | | | |
| 2.3S.1 | Observe, measure, and record properties of objects and substances using simple tools to gather data and extend the senses. | | | | | | | | | | | | | | | | | | | |
| 2.3S.2 | Make predictions about living and non-living things and events in the environment based on observed patterns. | | | | | | | | | | | | | | | | | | | |
| 2.3S.3 | Make, describe, and compare observations, and organize recorded data. | Ext A,B,C | | | | Ext A,B,C | Ext A,B | Ext A | | | | | | | | | | Ext A | | Ext A |
| 3.3S.1 | Plan a simple investigation based on a testable question, match measuring tools to their uses, and collect and record data from a scientific investigation. | Ext A,B,C | | Ext B | | Ext A,B,C | Ext A,B | Ext B | | Ext A,B | | | Ext B,C | | | | | Ext A,B | | |
| 3.3S.2 | Use the data collected from a scientific investigation to explain the results and draw conclusions. | | | | | | | | | | | | | | | | | | | |
| 3.3S.3 | Explain why when a scientific investigation is repeated, similar results are expected. | | | | | | | | | | | | | | | | | | | |
| 4.3S.1 | Based on observations identify testable questions, design a scientific investigation, and collect and record data consistent with a planned scientific investigation. | Ext A,B,C | | Ext B | Ext A,C | Ext A,B | Ext A,C | Ext A,B | Ext B | Ext A,B | Ext A | Ext A,B | Ext A,B,C | Ext B,C | | Ext A,B,C | Ext A | Ext A,B | Ext A,B | Ext A,B,C |
| 4.3S.2 | Summarize the results from a scientific investigation and use the results to respond to the question being tested. | | | | | | | | | Ext A,B | | | | | | | | | | |
| 4.3S.3 | Explain that scientific claims about the natural world use evidence that can be confirmed and support a logical argument. | | | | | | | | | | | | | | | | | | | |
| 5.3S.1 | Based on observations and science principles, identify questions that can be tested, design an experiment or investigation, and identify appropriate tools. Collect and record multiple observations while conducting investigations or experiments to test a scientific question or hypothesis. | Ext A,B,C | | Ext B | Ext A,C | Ext A,B | Ext A,B,C | | Ext B | Ext A,B | Ext A,B | Ext A,B | Ext A,B,C | Ext B,C | Ext A | Ext A,B,C | Ext A | Ext A,B | Ext A,B | Ext A,B,C |
| 5.3S.2 | Identify patterns in data that support a reasonable explanation for the results of an investigation or experiment and communicate findings using graphs, charts, maps, models, and oral and written reports. | Ext A,B,C | Ext B,C | | Ext A,C | Ext A,B | Ext A,B,C | | Ext A,B | Ext A,B | Ext A,B | | Ext A,B,C | Ext B,C | Ext A | Ext A,B,C | Ext A | Ext A,B | Ext A,B | Ext A,B,C |

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Scientific Inquiry (continued)

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|--------|---|-----------|---------|---------|---------|---------|-----------|--|---------|---------|---------|-----------|-----------|---------|-------|-----------|-------|---------|---------|-----------|-------|
| 5.3S.3 | Explain the reasons why similar investigations may have different results. through scientific investigation. Design and conduct an investigation that uses appropriate tools and techniques to collect relevant data. | Ext C | | Ext B | Ext A,C | Ext A,B | Ext A,C | | Ext B | Ext A,B | | Ext A,B | Ext A,B | Ext B,C | | Ext C | Ext A | Ext A | Ext B | Ext A,B,C | Ext A |
| 6.3S.1 | Organize and display relevant data, construct an evidence-based explanation of the results of an investigation, and communicate the conclusions. | Ext A,B,C | Ext B,C | Ext A,B | Ext A,C | Ext A,B | Ext A,B,C | | Ext B | | Ext A,B | | Ext A,B,C | Ext B,C | Ext A | Ext A,B,C | Ext A | Ext A,B | Ext A,B | Ext A,B,C | Ext A |
| 6.3S.2 | Explain why if more than one variable changes at the same time in an investigation, the outcome of the investigation may not be clearly attributable to any one variable. | | | | | | | | | | | | Ext A,B,C | | | | Ext A | | | Ext A,B,C | Ext A |
| 7.3S.1 | through scientific investigation. Design and conduct a scientific investigation that uses appropriate tools and techniques to collect relevant data. | Ext C | | Ext B | Ext A,C | Ext A,B | Ext A,C | | Ext A,B | Ext A,B | | Ext A,B | Ext A,B,C | Ext B,C | | Ext C | Ext A | Ext A | Ext B | Ext A,B,C | Ext A |
| 7.3S.2 | Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of an investigation, and communicate the conclusions including possible sources of error. | Ext A,B,C | | Ext A,B | Ext A,C | Ext A,B | Ext A,B,C | | Ext A,B | | | Ext A,B,C | Ext B,C | Ext B,C | | Ext A,B,C | Ext A | Ext A | Ext B | Ext A,B,C | Ext A |
| 8.3S.1 | through scientific investigation. Design and conduct a scientific investigation that uses appropriate tools, techniques, independent and dependent variables, and controls to collect relevant data. | Ext C | | Ext B | Ext A,C | Ext A,B | Ext A,C | | Ext A,B | Ext A,B | | Ext A,B | Ext A,B,C | Ext B,C | | Ext C | Ext A | Ext A | Ext B | Ext A,B,C | Ext A |
| 8.3S.2 | Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of a scientific investigation, and communicate the conclusions including possible sources of error. Suggest new investigations based on analysis of results. | Ext A,B,C | | Ext A,B | Ext A,C | Ext A,B | Ext A,B,C | | Ext A,B | | | Ext A,B,C | Ext B,C | Ext B,C | | Ext A,B,C | Ext A | Ext A,B | Ext B | Ext A,B,C | Ext A |

Engineering Design

| | | | | | | | | | | | | | | | | | | | | | |
|--------|--|--|--|-------|-------|--|--|--|-------|--|--|--|--|--|--|--|-------|--|--|--|--|
| 1.4D.1 | Identify basic tools used in engineering design. | | | | | | | | Ext B | | | | | | | | | | | | |
| 1.4D.2 | Demonstrate that designed structures have parts that work together to perform a function. | | | | | | | | Ext B | | | | | | | | Ext B | | | | |
| 2.4D.1 | Use tools to construct a simple designed structure out of common objects and materials. | | | | | | | | Ext B | | | | | | | | Ext B | | | | |
| 2.4D.2 | Work with a team to complete a designed structure that can be shared with others. | | | | | | | | Ext B | | | | | | | | | | | | |
| 2.4D.3 | Describe an engineering design that is used to solve a problem or address a need. | | | | | | | | | | | | | | | | Ext B | | | | |
| 3.4D.1 | Identify a problem that can be addressed through engineering design, propose a potential solution, and design a prototype. | | | | | | | | Ext B | | | | | | | | Ext B | | | | |
| 3.4D.2 | Describe how recent inventions have significantly changed the way people live. | | | | | | | | | | | | | | | | | | | | |
| 4.4D.1 | Identify a problem that can be addressed through engineering design using science principles. | | | | | | | | | | | | | | | | Ext B | | | | |
| 4.4D.2 | Design, construct, and test a prototype of a possible solution to a problem using appropriate tools, materials, and resources. | | | Ext B | | | | | | | | | | | | | Ext B | | | | |
| 4.4D.3 | Explain how the solution to one problem may create other problems. | | | | Ext B | | | | | | | | | | | | | | | | |
| 5.4D.1 | Using science principles describe a solution to a need or problem given criteria and constraints. | | | Ext B | | | | | | | | | | | | | Ext B | | | | |
| 5.4D.2 | Design and build a prototype of a proposed engineering solution and identify factors such as cost, safety, appearance, environmental impact, and what will happen if the solution fails. | | | | Ext A | | | | | | | | | | | | Ext B | | | | |
| 5.4D.3 | Explain that inventions may lead to other inventions and once an invention exists, people may think of novel ways of using it. | | | | | | | | | | | | | | | | | | | | |
| 6.4D.1 | Define a problem that addresses a need and identify science principles that may be related to possible solutions. | | | | | | | | | | | | | | | | Ext B | | | | |

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|---|---------------------|--|------------------------|--------------------------|---------------------|------------------------|-----------------------|---------------------|---------------------|--------------------|-------------------|----------------------|--------------------|-------------------------|--------------------|------------------------------|--------------------------------|----------------------------|-----------------------------|--------------------|-------------------------|
| Engineering Design (continued) | | | | | | | | | | | | | | | | | | | | | |
| Design, construct, and test a possible solution to a defined problem using appropriate tools and materials. | | | | | | | | | | | | | | | | | | | | | |
| 6.4D.2 Evaluate proposed engineering design solutions to the defined problem. | | | | Ext A | | | | | | | | | | | | | Ext B | | | | |
| 7.4D.1 Define a problem that addresses a need and identify constraints that may be related to possible solutions. | | | | Ext A | | | | | | | | | | | | | Ext B | | | | |
| 8.4D.1 Define a problem that addresses a need, and using relevant science principles investigate possible solutions given specified criteria, constraints, priorities, and trade-offs. | | | Ext B | Ext A | | | | | | | | | | | | | Ext B | | | | |
| 8.4D.2 Design, construct, and test a proposed engineering design solution and collect relevant data. Evaluate a proposed design solution in terms of design and performance criteria, constraints, priorities, and trade-offs. Identify possible design improvements. | | | Ext B | Ext A | | | | | | | | | | | | | Ext B | | | | |
| 8.4D.3 Explain how creating a new technology requires considering societal goals, costs, priorities, and trade-offs. | | | | | | | | | | | | | | | | | Ext B | | | | |