This resource is intended to provide teachers with a potential guide for how to implement the Grade 4 FOSS courses. It is by no means a rigid pacing calendar. Rather, the hope is that teachers use this document as a planning tool when determining approximately how many days to spend on each investigation. Be sure to pay attention to the red highlighted boxes. These indicate meaningful instructional opportunities for reading, research, and/or writing that support students in developing a deeper understanding of science concepts explored in the investigations. The Grade 4 Implementation Guide also intentionally includes a Flex Day before and after most I-Checks. It’s encouraged to spend these days reviewing concepts prior to and having students reflect on their work after completing these assessments. However, if a Flex Day is needed to be used for instruction to make up for missed classes, that is always an option. We hope this resource is a valuable tool and please continue to share feedback with the GEMS-Net team as we look to continually improve our support.

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<th>Week #</th>
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<tr>
<td>Week 1</td>
<td>SR Survey</td>
<td>SR Inv 1.1 Active Investigation</td>
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<td>SR Inv 1.1 Writing</td>
<td>SR Inv 1.1 Reading: “What is Soil?”</td>
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<tr>
<td>Week 2</td>
<td>SR Inv 1.2 Active Investigation Physical weathering concept definition map</td>
<td>SR Inv 1.2 Active Investigation &amp; Writing/Response Sheet (Based on observations from day before and model)</td>
<td>SR Inv 1.3 Active Investigation Performance Assessment</td>
<td>SR Inv 1.3 Active Investigation</td>
<td>SR Inv 1.3 Active Investigation Add chemical weathering to physical weathering concept definition map</td>
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<td>Week 3</td>
<td>SR Inv 1.3 Reading: “Weathering”</td>
<td>SR Inv 1.3 Video: “Weathering and Erosion” Chapters 3 and 4</td>
<td>SR Inv 1.4 Active Investigation (Outdoor session)</td>
<td>SR Inv 1.4 Active Investigation Video: “Soils”</td>
<td>SR Flex Day Review Inv 1</td>
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<td>Week 4</td>
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<td>Active Investigation and Video: “Fossils” (Chapters 2-7)</td>
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<td>Active Investigation (Steps 11-13) and Writing</td>
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<td>Response Sheet: Sheets A and B - Investigation 3</td>
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<td>Research/Reading: “The Story of Mount Shasta”</td>
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<td>Research/Video: “Natural Resources”</td>
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| Week 11 | SR | Inv 4.2  
Active Investigation | SR | Inv 4.2  
Research/Reading: “Making Concrete” | SR | Inv 4.2  
Writing | SR | Inv 4.3  
Active Investigation (Outdoor session)  
Performance Assessment | SR | Inv 4.3  
Writing |
|---|---|---|---|---|---|---|---|---|
| Week 12 | SR | Inv 4.3  
Research/Reading: “Earth Materials in Art”  
Research/Reading: “Where Do Rocks Come From?” | SR | Flex Day  
Review Inv. 4 | SR | Posttest | SR | Flex Day  
Posttest Self Assess | EG | Survey |
| Week 13 | EG | Inv 1.1  
Active Investigation | EG | Inv 1.1  
Writing | EG | Inv 1.1  
Research/Reading: “Edison Sees the Light”  
Building an Argument | EG | Inv 1.2  
Active Investigation  
Writing / Online activities | EG | Inv 1.2  
Flex Day  
Review Inv. 1 |
| Week 14 | EG | Inv 1.2  
Research/Reading: “Energy Sources” | EG | Inv 1.3  
Active Investigation  
Steps 1-14 | EG | Inv 1.3  
Active Investigation  
Steps 15-24 | EG | Inv 1.3  
Writing/Response Sheet - Investigation 1 | EG | Inv 1.3  
Research/Reading: “Series and Parallel Circuits” |
| Week 15 | EG | Inv 1.4  
Active Investigation | EG | Inv 1.3  
Writing | EG | Inv 1.3  
Research/Reading: “Thinking Like an Engineer” and “Engineering a Solar Lighting System” | EG | Flex Day  
Review Inv. 1 | EG | I-Check 1 |
| Week 16 | EG | Flex Day  
I-Check 1 Self Assess | EG | Inv 2.1  
Active Investigation | EG | Inv 2.1  
Writing | EG | Inv 2.1  
Outdoor session/ online activity | EG | Inv 2.2  
Active Investigation |
| Week 17 | EG | Inv 2.2  
Active Investigation  
Steps 1-8 | EG | Inv 2.2  
Active Investigation  
Steps 9-19 | EG | Inv 2.2  
Writing/Response Sheet - Investigation 2 | EG | Inv 2.2  
Research/Reading: “When Magnet Meets Magnet”  
Video: “All About Magnets”  
Online activities | EG | Inv 2.3  
Active Investigation  
Steps 1-12  
Performance Assessment |
| Week 18 | EG | Inv 2.3 | Active Investigation  
|         | EG | Inv 2.3 | Steps 13-17  
|         | EG | Flexible Day | Review Inv. 2  
|         | EG | I-Check 2 | Self Assess  
|         | EG | Flexible Day | Review Inv. 2  
|         | EG | I-Check 2 | Self Assess  
| Week 19 | EG | Inv 3.1 | Active Investigation  
|         | EG | Inv 3.1 | Response Sheet - Investigation 3  
|         | EG | Inv 3.1 | Writing  
|         | EG | Inv 3.1 | Research/Reading: “Magnificent Magnetic Models”  
|         | EG | Inv 3.2 | Active Investigation  
|         | EG | Inv 3.2 | Writing / Online activities  
| Week 20 | EG | Inv 3.2 | Research/Reading: “Using Magnetic Fields” and “Electromagnets Everywhere”  
|         | EG | Inv 3.3 | Active Investigation  
|         | EG | Inv 3.3 | Writing  
|         | EG | Inv 3.3 | Research/Reading: “Electricity Creates Magnetism”  
|         | EG | Inv 4.2 | Active Investigation  
|         | EG | Inv 4.2 | Writing  
| Week 21 | EG | Flexible Day | Self Assess  
|         | EG | Inv 4.1 | Active Investigation  
|         | EG | Inv 4.1 | Writing  
|         | EG | Inv 4.1 | Research/Reading: “Energy”  
|         | EG | Inv 4.2 | Active Investigation  
| Week 22 | EG | Inv 4.2 | Research/Reading: “What Causes Change of Motion?”  
|         | EG | Inv 4.3 | Active Investigation  
|         | EG | Inv 4.3 | Active Investigation Steps 1-9  
|         | EG | Inv 4.3 | Active Investigation Steps 10-14 and Writing  
|         | EG | Inv 4.3 | Research/Reading: “Bowling” and “Force and Energy”  
| Week 23 | EG | Inv 4.3 | Research/Reading: “Potential and Kinetic Energy at Work”  
|         | EG | Flexible Day | Review Inv. 4  
|         | EG | I-Check 4 | Self Assess  
|         | EG | Flexible Day | Self Assess  
|         | EG | Inv 5.1 | Active Investigation Steps 1-12  
|         | EG | Inv 5.1 | *Step 6 and 12 include short video clips*  

*Step 6 and 12 include short video clips*
| Week 24 | EG | Inv 5.1 | Active Investigation | Steps 13-18 | Video: "All about Waves" | Writing |
|        | EG | Inv 5.1 | Research/Reading: "Waves" and "More About Sound" |
|        | EG | Inv 5.2 | Active Investigation | Steps 1-10 |
|        | EG | Inv 5.2 | Research/Reading: "Light Interactions", "Throw a Little Light on Sight", and "More Light on the Subject" |

| Week 25 | EG | Inv 5.3 | Active Investigation | Outdoor session |
|        | EG | Inv 5.3 | Writing |
|        | EG | Inv 5.3 | Research/Reading: "Alternative Sources of Electricity" and "Ms. Osgood’s Class Report" |
|        | EG | Flex Day | Review Inv. 5 |
|        | EG | Posttest |

| Week 26 | EG | Flex Day | Posttest |
|        | EV | Survey |
|        | EV | Inv. 1.1 | Active Investigation | Steps 1-15 |
|        | EV | Inv. 1.1 | Active Investigation | Steps 16-19 |
|        | EV | Inv. 1.2 | Active Investigation | Steps 1-13 |
|        | EV | Inv. 1.2 | Research/Reading: "Setting Up a Terrarium" |
|        | EV | Inv. 1.3 | Active Investigation |
|        | EV | Inv. 1.3 | Research/Reading: "Amazon Rain Forest Journal" |
|        | EV | Inv. 1.1 | Writing |
|        | EV | Review Inv. 1 |

| Week 27 | EV | OBSERVE MEALWORMS | Inv. 1.2 | Active Investigation | Steps 14-19 |
|        | EV | Inv. 1.2 | Research/Reading: "Isopods" |
|        | EV | Inv. 1.3 | Active Investigation |
|        | EV | Inv. 1.3 | Research/Reading: "Two Terrestrial Environments" |

| Week 28 | EV | OBSERVE MEALWORMS | I-Check 1 |
|        | EV | OBSERVE MEALWORMS | OBSERVE AQUARIUM |
|        | EV | Inv. 2.1 | Active Investigation | Steps 12-18 |
|        | EV | Inv. 2.1 | Research/Reading: "Freshwater Environments" |
|        | EV | Inv. 2.2 | Active Investigation | Steps 1-10 |
| Week 29 | EV | OBSERVE MEALWORMS  
Inv. 2.2  
Writing  
Active Investigation  
Steps 13-16 | EV | OBSERVE MEALWORMS  
Inv. 2.2  
Research/Reading: “What is an Ecosystem?” and “Food Chain and Food Webs”  
OBSERVE AQUARIUM  
Inv. 2.3  
Active Investigation  
Outdoor Session  
Steps 1-17 | EV | Inv. 2.3  
Research/Reading: “Human Activities and Aquatic Ecosystems”  
Online Activities | EV | Inv. 2.3  
Writing  
Active Investigation  
Steps 20-22 | | |
| Week 30 | EV | OBSERVE MEALWORMS  
Inv. 2.4  
Active Investigation  
Steps 1-13  
Outdoor Session  
Video: “Animal Language and Communication” | EV | Inv. 2.4  
Writing/Response Sheet  
- Investigation 2  
Research/Reading: “Animal Sensory Systems” and “Saving Murrelets through Mimicry”  
OBSERVE AQUARIUM  
Review Inv. 2 | EV | Flex Day  
I-Check 2  
Self Assess | EV | Flex Day  
I-Check 2  
Self Assess | | |
| Week 31 | EV | OBSERVE MEALWORMS  
Inv. 3.1  
(test eggs/water first)  
Active Investigation  
Steps 1-13  
Performance Assessment | EV | Inv. 3.1  
Research/Reading: “Brine Shrimp”  
Inv. 3.2  
Active Investigation  
Steps 1-4 | EV | OBSERVE MEALWORMS  
Inv. 3.2  
Active Investigation  
Steps 5-9  
Research/Reading: “The Mono Lake Story”  
OBSERVE AQUARIUM  
Review Inv. 3 | EV | Inv. 3.2  
Active Investigation  
Steps 10-17  
Research/Reading: “What Happens When Ecosystems Change”  
Inv. 3.3  
Active Investigation  
Steps 1-5 | | |
| Week 32 | EV | OBSERVE MEALWORMS  
Inv. 3.3  
Active Investigation  
Steps 6-11  
Response Sheet | EV | Inv. 3.3  
Active Investigation  
Steps 12-16  
Research/Reading: “The Shrimp Club”  
Online Activity: “Trout Range of Tolerance”  
OBSERVE AQUARIUM  
Inv. 3.4  
Active Investigation  
Steps 1-15  
Inv. 4.1  
Active Investigation  
Steps 14-27 | EV | Inv. 3.4  
Writing  
Steps 16-19  
Research/Reading: “Variation and Selection”  
Review Inv. 3 | EV | I-Check 3  
Self Assess | | |
| Week 33 | EV | OBSERVE MEALWORMS  
Inv. 1.1  (Steps 23-28)  
I-Check 3  
Self Assess | EV | Inv. 4.1  
Active Investigation  
Steps 1-13  
Performance Assessment | EV | OBSERVE MEALWORMS  
Inv. 4.1  
Active Investigation  
Steps 14-27  
OBSERVE AQUARIUM  
Inv. 4.2  
Active Investigation  
Steps 1-12  
Outdoor Session | EV | Inv. 4.2  
Writing  
Steps 13-15  
Response Sheet - Inv. 4 | EV | Inv. 4.2  
Writing  
Steps 16-19  
Performance Assessment |
| Week 34 | EV | OBSERVE MEALWORMS Inv. 4.1  
Active Investigation Steps 28-30  
Research/Reading: "Range of Tolerance" (Steps 47-48)  
OBSERVE PLANTS DAY5 |
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|         | EV | Inv. 4.2  
Research/Reading: "Animals from the Past" |
|         | EV | OBSERVE MEALWORMS OBSERVE AQUARIUM Inv. 1.1  
Steps 29-30  
Research/Reading: "Darkling Beetles"  
OBSERVE PLANTS DAY8 |
|         | EV | Inv. 4.1  
Active Investigation Steps 31-33  
Research/Reading: "How Organisms Depend on One Another" (Steps 49-50)  
OBSERVE PLANTS DAY8 |
|         | EV | Inv. 4.3  
Writing |
| Week 35 | EV | Inv. 4.3  
Writing |
|         | EV | Inv. 4.1  
Active Investigation Steps 34-42  
OBSERVE PLANT DAY13 |
|         | EV | Inv. 4.1  
Writing  
Research/Reading: "Environmental Scientists" |
|         | EV | Inv. 4.1  
Online Activity: "Analyzing Environmental Experiments" |
|         | EV | Flex Day  
Review Inv. 4 |
| Week 36 | EV | Posttest  
Posttest Self Assess |
|         | EV | Flex Day  
Self Assess |
|         | EV | Flex Day  
Self Assess |
|         | EV | Flex Day  
Self Assess |