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|  |  2017-2018 Elementary Science  Quick Guide Grade 1 |

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Grade 1: Year at a Glance

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| Topic Scales | **Plants and Animals Foss Kit****Q1** | **Air and Weather Foss kit****Q3** | **Light and Sound Foss Kit****Q4** |
| *Suggested Pacing* | *Sept.-Oct.* | *March* | *Apr-May* |
| **Heredity** | Investigations 1, 2, 3, and 4  |  |  |
| **How Things Survive** | Investigations 1, 2, 3, and 4 |  |  |
| **Patterns in the Sky** |  | Investigations 2 and 4 |  |
| **Light Waves** |  |  | Investigations 1 and 2 |
| **Sound Waves** |  |  | Investigations 3 and 4 |

1st Grade Science

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| HereditySEP- Constructing an Explanation DCI- Heredity CCC- Patterns |
| 4 | The student demonstrates in-depth inferences and applications that go beyond the goal. |
| 3Learning Goal | Students will:1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. ([1-LS 3-1](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-LS3-1%20Evidence%20Statements%20June%202015%20asterisks.pdf))
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| 2 | Students will:1. 1. Describe observations from a plant investigation.

2. Recognize plant and animal offspring are like (but not exactly like) parents.3. Describe characteristics that distinguish different plants and/or animals from each other.4. List plant and /or animal differences/similarities.Students will recognize or recall specific vocabulary, such as:Offspring, inherit, Trait, Pattern, Stem, Seed,  |
| 1 | Student's performance reflects beginning-to-learn foundational skills and knowledge.   |

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| How Things SurviveSEP- Constructing an Explanation, Obtaining, Evaluating and Communicating Information DCI- Molecules to Organisms CCC- Patterns, Structure and Function |
| 4 | The student demonstrates in-depth inferences and applications that go beyond the goal. |
| 3Learning Goal | Students will:1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.\* ([1-LS1-1](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-LS1-1%20Evidence%20Statements%20June%202015%20asterisks.pdf), [K-2-ETS1-2](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/K-2-ETS1-2%20Evidence%20Statements%20June%202015%20asterisks.pdf))
2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. ([1 LS1-2](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-LS1-2%20Evidence%20Statements%20June%202015%20asterisks.pdf) )
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| 2 | Students will: 1. 1. With guidance, describe a solution to a living system (terrarium) problem.

2. Describe a device to solve a human problem (examples: mimicking-external structures, sensing and convey information, responding to the environment).3. List features of a device to solve a human problem.4. Describe how the solution does or does not meet the solution criteria.1. 1. Use books to find information on the survival of living things and their offspring.

2. Identify patterns in what parent and offspring do to survive.3. Describe how parents help offspring survive. Students will recognize or recall specific vocabulary, such as:Structure, Function, Pattern, Survive, Grow, Mimic, Respond, Environment, Offspring |
| 1 | Student's performance reflects beginning-to-learn foundational skills and knowledge.   |

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| Patterns in the SkySEP- Plan and Carry out Investigations, Analyze Data DCI- Earth’s Place in the universe CCC- Patterns |
| 4 | The student demonstrates in-depth inferences and applications that go beyond the goal. |
| 3Learning Goal | Students will:1. Use observations of the sun, moon, and stars to describe patterns that can be predicted. ([1 ESS1-1](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-ESS1-1%20Evidence%20Statements%20June%202015%20asterisks.pdfhttps%3A//www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-ESS1-1%20Evidence%20Statements%20June%202015%20asterisks.pdf))
2. Make observations at different times of year to relate amount of daylight to time of year. ([1 ESS 1-2](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-ESS1-2%20Evidence%20Statements%20June%202015%20asterisks.pdf))

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| 2 | Students will:1. 1. With guidance organize data into charts and/or pictures (what is visible in day, night, sun and moon position at different times of the day and night, weather calendar)

 2. Identify and describe patterns from observations. 3. Use sky patterns to make predictions for future days and times.B. 1. Identify relationships between the amount of daylight and time of year 2. Use observations over time to state daylight patterns 3. Make and record observations over an extended period of time.Students will recognize or recall specific vocabulary, such as:Pattern, Star, Sun, Moon, Earth, Daylight, Predict, Sunrise, Sunset, Cloud |
| 1 | Student's performance reflects beginning-to-learn foundational skills and knowledge.   |

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| Sound WavesSEP- Plan and Carry out Investigations, Constructing Explanations DCI- Wave Application CCC- Cause and Effect |
| 4 | The student demonstrates in-depth inferences and applications that go beyond the goal. |
| 3Learning Goal | Students will:1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. ([1-PS4-1](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-PS4-1%20Evidence%20Statements%20June%202015%20asterisks.pdf))
2. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.\* ([1-PS4-4](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-PS4-4%20Evidence%20Statements%20June%202015%20asterisks.pdf), [K-2-ETS1-2](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/K-2-ETS1-2%20Evidence%20Statements%20June%202015%20asterisks.pdf))
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| 2 | Students will:1. 1. Identify relationships between vibration and sound.

2. Observe that sound can make things vibrate and that vibration can make sound.3. Collect data to support the sound/vibration relationship.4. Collaboratively develop an investigation around vibration/sound(materials used,  data collected, method for recording data, what will be recorded, how it will be  shared)1. 1. Describe a problem involving people communicating over long distance.

2. Describe a way to solve a communication problem with sound.3. Describe effectiveness of communication solutions.Students will recognize or recall specific vocabulary, such as:Vibrate, Sound, Cause, Effect, Application, Wave, Volume, Pitch |
| 1 | Student's performance reflects beginning-to-learn foundational skills and knowledge.   |

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| Light WavesSEP- Plan and Carry out Investigations, Constructing Explanations DCI- Wave Application CCC- Cause and Effect |
| 4 | The student demonstrates in-depth inferences and applications that go beyond the goal. |
| 3Learning Goal | Students will:1. Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated. ([1-PS4-2](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-PS4-2%20Evidence%20Statements%20June%202015%20asterisks.pdf))
2. Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light. ([1 PS4-3](https://www.nextgenscience.org/sites/default/files/evidence_statement/black_white/1-PS4-3%20Evidence%20Statements%20June%202015%20asterisks.pdf))
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| 2 | Students will:1. 1. Express the need for light to see objects.

2. Make observations of an object’s appearance in the light, dark, and in the dark when an object produces a light.3. Use observations as evidence to support an explanation of how we see.1. 1. Collaboratively design an investigation around light (how light passes through (or not) different materials).

2. Conduct an investigation around light.3. Collect and record observations from investigation.4. Use information from investigation as evidence to answer questions.Students will recognize or recall specific vocabulary, such as:Wave, Light, Illuminate, Evidence Cause, Effect, Transparent, Translucent, Opaque, Reflective. |
| 1 | Student's performance reflects beginning-to-learn foundational skills and knowledge.   |