# Science Pacing Guide

## Grade K

<table>
<thead>
<tr>
<th>MP</th>
<th>Units</th>
<th>Unit TOTAL*</th>
<th>Cumulative TOTAL**</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP1</td>
<td><strong>Unit 1 – Pushes and Pulls</strong>&lt;br&gt;Chapter 1: Read Aloud, Try It!, Lesson 2, Lesson 3, Lesson 4, and Inquiry Investigate It!</td>
<td>13 days</td>
<td>13 days</td>
</tr>
<tr>
<td>MP1</td>
<td><strong>Unit 2 – Effects of the Sun</strong>&lt;br&gt;Chapter 3: Read Aloud, Lesson 1, Lesson 2, Lesson 3, Lesson 5, and Scaffolded Inquiry Support: Guided</td>
<td>13 days</td>
<td>26 days</td>
</tr>
<tr>
<td>MP2</td>
<td><strong>Unit 3 – Weather</strong>&lt;br&gt;Chapter 3: Try It!, Lesson 4, STEM Activities, and Inquiry Investigate It!</td>
<td>14 days</td>
<td>40 days</td>
</tr>
<tr>
<td>MP3</td>
<td><strong>Unit 4 – Basic Needs of Living Things</strong>&lt;br&gt;Chapter 2: Try It!, Lesson 2, Lesson 3, Lesson 4, and Inquiry Investigate It!</td>
<td>27 days</td>
<td>67 days</td>
</tr>
<tr>
<td>MP4</td>
<td><strong>Unit 5 – Basic Needs of Humans</strong>&lt;br&gt;Chapter 2: Biography, Lesson 5, and Lesson 6; Chapter 3: Lesson 6 and Performance-Based Activity</td>
<td>13 days</td>
<td>80 days</td>
</tr>
<tr>
<td>MP1-4</td>
<td><strong>FLEX DAYS</strong></td>
<td>10 days</td>
<td>90 days</td>
</tr>
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* Unit Total is inclusive of introduction, instruction, assessment, labs, projects, etc. for that particular unit.

** Cumulative Total is a running total, inclusive of prior and current units.
# Pemberton Township School District
## Unit Planner

### Unit Title: Kindergarten - Unit 1 - Pushes and Pulls

### Stage 1: Desired Results

**Standards & Indicators:**

- **NJSLS – Science**
  - PS2.A: FORCES AND MOTION
    - K-PS2-1
    - K-PS2-2
  - PS2.B: TYPES OF INTERACTIONS
  - PS3.C RELATIONSHIP BETWEEN ENERGY AND FORCES
    - Secondary to K-PS2-1
  - ETS1.A: DEFINING AND DELIMITING AN ENGINEERING PROBLEM
    - Secondary to K-PS2-2
  - ETS1.B: DEVELOPING POSSIBLE SOLUTIONS
    - K-2-ETS1-1

- **NJSLS – Math**
  - MP.2
  - MP.4
  - MP.5
  - K.MD.A.1
  - K.MD.A.2

- **NJSLS – English Language Arts**
  - RI.K.1
  - W.K.7
  - SL.K.3

- **NJSLS – Technology**
  - 8.1.2.A.1
  - 8.1.2.A.2
  - 8.1.2.A.4

- **NJSLS – 21st Century Life and Careers**
  - 9.2.4.A.3
Pemberton Township School District
Unit Planner

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<th>Central Idea / Enduring Understanding:</th>
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| ● During this unit of study, students apply an understanding of the effects of different strengths or different directions of pushes and pulls on the motion of an object to analyze a design solution. The crosscutting concept of cause and effect is called out as the organizing concept for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in planning and carrying out investigations and analyzing and interpreting data. Students are also expected to use these practices to demonstrate understanding of the core ideas. | ● What does science have to do with playing sports?  
● Why do scientists like to play soccer?  
● How can you design a simple way to change the speed or direction of an object using a push or pull from another object?  
● What are position and motion? |

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<th>Content:</th>
<th>Skills (Objectives):</th>
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| ● People use different ways to study the world.  
● Simple tests can be designed to gather evidence to support or refute student ideas about causes.  
● Pushes and pulls can have different strengths and directions.  
● Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.  
● When objects touch or collide, they | ● Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment
A bigger push or pull makes things speed up or slow down more quickly.

Simple tests can be designed to gather evidence to support or refute student ideas about causes.

Pushes and pulls can have different strengths and directions.

Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.

A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.

Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.

Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]

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<td>• Formative Assessments</td>
<td>• Review Vocabulary Smart Cards</td>
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<td>• Guided Inquiry Labs</td>
<td>• Students make connections to the</td>
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Pemberton Township School District  
Unit Planner

- Performance Expectation Activities  
- Inquiry Investigate It!  
- Unit Assessment

“Unlock the Big ?” in each lesson.  
- Have students restate or contrast topics in each lesson

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### Stage 3: Learning Plan

#### Learning Opportunities/Strategies:

**Pearson Chapter 1**

- Inquiry: Students will observe and describe the motion of an object by tracing its path.
- STEM Activity - Move It Around
- Read Aloud - How does the ball move?

**Pearson Chapter 1 - Lesson 2: What makes objects move?**

- Engage and Explore  
  - Envision It! Tell what the children are doing.
  - Activate prior knowledge  
  - Investigate how a push or pull can change how an object moves

- Explain and Elaborate  
  - What makes objects move?

#### Resources:

**Pearson Chapter 1**

- Inquiry  
  - Try It! How do objects move? TE p. 10; SE p. 2
  - STEM TE pp. 12-15
  - Read Aloud - TE p. 8

**Pearson Chapter 1 - Lesson 2**

- Engage and Explore  
  - Envision It! p. TE 18
  - TE p. 18; p. SE 15

- Explain and Elaborate  
  - TE pp. 18-19; SE p. 15
  - Compare and Contrast; Predict; Cause and Effect TE p. 19
### Pearson Chapter 1 - Lesson 3: What are some ways objects move?

- **Engage and Explore**
  - Envision It! Tell what objects are moving in each picture.
  - Activate prior knowledge
  - Compare objects by how fast they move.
- **Explain and Elaborate**
  - What are some ways objects move?

### Pearson Chapter 1 - Lesson 4: How do moving objects affect each other?

- **Engage and Explore**
  - Envision It! Tell what happens to the toy cars.
  - Activate prior knowledge
  - Investigate to determine how moving objects affect each other.
- **Explain and Elaborate**
  - How do moving objects affect each other?

### Evaluate
- **Formative Assessment**
- **Unit Cumulative Activities**
  - Performance Expectation

### Pearson Chapter 1 - Lesson 3

- **Engage and Explore**
  - Envision It! TE p. 20
  - TE p. 20; SE p. 16
- **Explain and Elaborate**
  - TE pp. 20-21; SE p. 16
  - Synthesize; Compare and Contrast; Apply TE p. 21

### Pearson Chapter 1 - Lesson 4

- **Engage and Explore**
  - Envision It! TE p. 22
  - TE p. 22; SE p. 17
- **Explain and Elaborate**
  - TE pp. 22-23; SE p. 17
  - Predict; Cause and Effect TE p. 23
- **Evaluate**
  - TE pp. 30-32
- **Unit Cumulative Activities**
  - TE pp. 33a-33b
## Pemberton Township School District
### Unit Planner

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<th>Activity</th>
<th>Additional resources:</th>
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<td>○ Performance-Based Assessment</td>
<td>○ Multi-Disciplinary Center Flip Chart</td>
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<tr>
<td>○ Inquiry Investigate It!- Students will observe that a push or a pull can change the motion of a toy car.</td>
<td>○ Science Song Coloring Book</td>
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<td></td>
<td>○ <a href="http://www.bozemanscience.com/">http://www.bozemanscience.com/</a></td>
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<td>○ <a href="http://ngss.nsta.org/">http://ngss.nsta.org/</a></td>
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<td></td>
<td>○ <a href="https://www.teachingchannel.org/ngss">https://www.teachingchannel.org/ngss</a></td>
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### Additional learning opportunities/strategies:
- Utilize other Pearson resources, online resources, and/or web links to support learning.

### Inquiry Investigate It!- How can you move the car? TE pp 24-25 SE p. 18

### Differentiation

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<th>Struggling Students</th>
<th>Special Needs/ELL</th>
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<td>● Advanced Leveled Content Reader</td>
<td>● On-Level Content Reader</td>
<td>● Structure lessons around questions that are authentic, relate to students’ interests,</td>
<td>● Provide ELL students with multiple literacy strategies.</td>
</tr>
<tr>
<td>● Use project-based science</td>
<td>● Use project-based science learning to</td>
<td></td>
<td>● Utilize the ELL lesson plan to identify content</td>
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| Learning to connect science with observable phenomena | Connect science with observable phenomena | Social/family background and knowledge of their community.
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<td>● Provide students with multiple choices for how they can represent their understanding (e.g. multisensory techniques - auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).</td>
<td>● Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool)</td>
<td>● Use project-based science learning to connect science with observable phenomena.</td>
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<td>● Use Envision it! to frontload the lesson by activating prior knowledge and building background knowledge.</td>
<td>● Utilize the ELL handbook for best practices and instructional strategies.</td>
<td></td>
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<td>and language objectives.</td>
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such as SKYPE, experts from the community helping with a project, journal articles, and biographies).

- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and Engineering practices to provide
| | students with multiple entry points and multiple ways to demonstrate their understanding. | Use project-based science learning to connect science with observable phenomena. | Structure the learning around explaining or solving a social or community-based issue. |
Pemberton Township School District
Unit Planner

Unit Title: Kindergarten - Unit 2 - Effects of the Sun

Stage 1: Desired Results

Standards & Indicators:

- NJSLS – Science
  - PS3.B: CONSERVATION OF ENERGY AND ENERGY TRANSFER
    - K-PS3-1
    - K-PS3-2
  - ETS1.A: DEFINING AND DELIMITING AN ENGINEERING PROBLEM
    - K-2-ETS1-1
  - ETS1.B: DEVELOPING POSSIBLE SOLUTIONS
    - K-2-ETS1-2
  - ETS1.C: OPTIMIZING THE DESIGN SOLUTION
    - K-2-ETS1-3

- NJSLS – Math
  - MP.2
  - MP.4
  - MP.5
  - K.MD.A.2
  - 2.MD.D.10

- NJSLS – English Language Arts
  - RI.2.1
  - W.K.7
  - SL.2.5
  - W.2.6
  - W.2.8

- NJSLS – Technology
  - 8.1.2.A.1
  - 8.1.2.A.2
  - 8.1.2.A.4

- NJSLS – 21st Century Life and Careers
## Pemberton Township School District

### Unit Planner

- 9.2.4.A.3
- 9.2.4.A.4

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<tr>
<th>Central Idea / Enduring Understanding:</th>
<th>Essential/Guiding Question:</th>
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<tbody>
<tr>
<td>During this unit of study, students apply an understanding of the effects of the sun on the Earth’s surface. The crosscutting concepts of cause and effect and structure and function are called out as organizing concepts for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in developing and using models; planning and carrying out investigations; analyzing and interpreting data; and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas.</td>
<td>How can we use science to keep a playground cool in the summertime?</td>
</tr>
<tr>
<td>How does sunlight affect the playground?</td>
<td>Imagine that we have been asked to design a new playground. How would we keep the sand, soil, rocks, and water found on the playground cool during the summer?</td>
</tr>
<tr>
<td>What are Earth and the sky like?</td>
<td></td>
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<tr>
<td>Sunlight warms Earth’s surface.</td>
<td>Make observations to determine the effect of sunlight on Earth’s surface. [Clarification Statement: Examples of Earth’s surface could include sand, soil, rocks, and water.] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]</td>
</tr>
<tr>
<td>Events have causes that generate observable patterns.</td>
<td>Use tools and materials provided to design and build a structure that will</td>
</tr>
<tr>
<td>The shape and stability of structures of natural and designed objects are related to their function(s).</td>
<td></td>
</tr>
<tr>
<td>Designs can be conveyed through sketches, drawings, or physical models.</td>
<td></td>
</tr>
<tr>
<td>These representations are useful in communicating ideas for a problem’s</td>
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</tr>
</tbody>
</table>
solutions to other people.
- Because there is always more than one possible solution to a problem, it is useful to compare and test designs.
reduce the warming effect of sunlight on Earth’s surface.* [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]
- Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

Stage 2: Assessment Evidence

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<thead>
<tr>
<th>Performance Task(s):</th>
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<td>• Inquiry Investigate It!</td>
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### Pemberton Township School District
### Unit Planner
### Stage 3: Learning Plan

#### Learning Opportunities/Strategies:

- **Pearson Chapter 3**
  - Read Aloud - Is it night or day?

- **Pearson Chapter 3 - Lesson 1: What can see in the day sky?**
  - Engage and Explore
    - Envision It! Tell what you see in the sky.
    - Activate prior knowledge
    - Students will observe when the sun, clouds, and moon can be seen in the sky.
  - Explain and Elaborate
    - What can you see in the day sky?

- **Pearson Chapter 3 - Lesson 2: How does the sun seem to move?**
  - Engage and Explore
    - Envision It! Tell where the sun is in each picture.
    - Activate prior knowledge
    - Students will describe patterns that show where the sun seems to be in the sky at different times of the day.
  - Explain and Elaborate
    - How does the sun seem to

#### Resources:

- **Pearson Chapter 3**
  - Read Aloud - TE p. 78

- **Pearson Chapter 3 - Lesson 1**
  - Engage and Explore
    - Envision It! TE p. 86
    - TE p. 86; SE p. 54
  - Explain and Elaborate
    - TE pp. 86-87; SE p. 54
    - Draw Conclusions and Compare and Contrast TE p. 89

- **Pearson Chapter 3 - Lesson 2**
  - Engage and Explore
    - Envision It! TE 88
    - TE 88; SE 55
  - Explain and Elaborate
    - TE 88-89; SE 55
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Pearson Chapter 3 - Lesson 3: What do you get from the sun?
- Engage and Explore
  - Envision It! Tell about the boy and the girl.
  - Activate prior knowledge
  - Students will communicate that the sun gives us light and can make us warm.
- Explain and Elaborate
  - What do you get from the sun?

Pearson Chapter 3 - Lesson 5: How can we use rocks, soil, and water?
- Engage and Explore
  - Envision It! Tell about the boy and the girl.
  - Activate prior knowledge
  - Students will communicate that the sun gives us light and can make us warm.
- Explain and Elaborate
  - What do you get from the sun?

Pearson Chapter 3 - Lesson 3
- Engage and Explore
  - Envision It! TE 90
  - TE 90; SE 56

Pearson Chapter 3 - Lesson 5
- Engage and Explore
  - TE 90-91; SE 56
  - Analyze, Apply and Draw Conclusions TE 91

Pearson Chapter 3 - Lesson 3
- Explain and Elaborate
  - TE 90-91; SE 56
  - Analyze, Apply and Draw Conclusions TE 91

Pearson Chapter 3 - Lesson 5
- Explain and Elaborate
  - TE 90-91; SE 56
  - Analyze, Apply and Draw Conclusions TE 91
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- Evaluate
  ○ Scaffolded Inquiry Support: Guided- How can the sun change things?

Additional learning opportunities/strategies:
- Utilize other Pearson resources, online resources, and/or web links to support learning.

- Evaluate
  ○ TE 102-103

Additional resources:
- Multi-Disciplinary Center Flip Chart
- Science Song Coloring Book
- http://www.bozemanscience.com/
- http://ngss.nsta.org/
- https://www.teachingchannel.org/ngss

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<td>Phenomena &amp; Community</td>
<td>Learning to Connect Science with Observable Phenomena</td>
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<tr>
<td>-----------------------</td>
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| project, journal articles, and biographies).  
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).  
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways
to demonstrate their understanding.
- Use project-based science learning to connect science with observable phenomena.
- Structure the learning around explaining or solving a social or community based issue.
**Unit Title:** Kindergarten - Unit 3 - Weather

### Stage 1: Desired Results

**Standards & Indicators:**

- **NJSLS – Science**
  - ESS2.D: WEATHER AND CLIMATE
    - K-ESS2-1
  - ESS3.B: NATURAL HAZARDS
    - K-ESS2-1
    - K-ESS3-2
  - ETS1.A: DEFINING AND DELIMITING AN ENGINEERING PROBLEM
    - K-2-ETS1-1

- **NJSLS – Math**
  - MP.2
  - MP.4
  - MP.5
  - K.CC
  - K.CC.A
  - K.MD.A.1
  - K.MD.B.3
  - 2.MD.D.10

- **NJSLS – English Language Arts**
  - W.K.7
  - RI.K.1
  - RI.2.1
  - W.K.7
  - SL.K.3
  - W.2.6
  - W.2.8

- **NJSLS – Technology**
  - 8.1.2.A.1
  - 8.1.2.A.2
  - 8.1.2.A.4

- **NJSLS – 21st Century Life and Careers**
  - 9.2.4.A.3
## Central Idea / Enduring Understanding:
- In this unit of study, students develop an understanding of patterns and variations in local weather and the use of weather forecasting to prepare for and respond to severe weather. The crosscutting concepts of patterns; cause and effect; interdependence of science, engineering, and technology; and the influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for the disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in asking questions, analyzing and interpreting data, and obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.

## Essential/Guiding Question:
- How does weather forecasting help to keep people safe?
- What types of patterns can be observed in local weather conditions?
- How does weather forecasting help us to prepare for and respond to severe weather?
- What are Earth and sky like?

## Content:
- Scientists look for patterns and order when making observations about the world.
- Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
- Weather is the combination of sunlight, wind, snow, or rain and temperature in a particular region at a particular time.
People measure these conditions to describe and record the weather and to notice patterns over time.

Events have causes that generate observable patterns.

People encounter questions about the natural world every day.

Some kinds of severe weather are more likely than others in a given region.

Weather scientists forecast severe weather so that communities can prepare for and respond to these events.

People depend on various technologies in their lives; human life would be very different without technology.

Before beginning to design a solution, it is important to clearly understand the problem.

could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.]

[Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]

Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*[Clarification Statement: Emphasis is on local forms of severe weather.]

Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

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**Stage 2: Assessment Evidence**

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<td>• Unit Assessment</td>
<td></td>
</tr>
</tbody>
</table>

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**Stage 3: Learning Plan**

<table>
<thead>
<tr>
<th>Learning Opportunities/Strategies:</th>
<th>Resources:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson Chapter 3</strong></td>
<td><strong>Pearson Chapter 3</strong></td>
</tr>
<tr>
<td>• Inquiry: Students will observe and</td>
<td>• Inquiry</td>
</tr>
</tbody>
</table>

---
record the weather for 1 month.

Pearson Chapter 3 - Lesson 4: What are some kinds of weather?

- Engage and Explore
  - Envision It! Tell about the weather in the picture.
  - Activate prior knowledge
  - Students will observe and record weather.
- Explain and Elaborate
  - What are some kinds of weather?

STEM Activity - Cool Down
  - Pre-activity Discussion
  - Post-activity Discussion

Evaluate
  - Formative Assessment

Unit Cumulative Activities
  - Performance Expectation Activity
  - Performance-Based Assessment
  - Inquiry Investigate It!-Students will observe the sun’s effect on temperature.
  - Inquiry Investigate It!: Guided- How else can the sun change things?

- Try It! How does weather change? TE p. 80; SE p. 42 (Math Routines)

Pearson Chapter 3 - Lesson 4

- Engage and Explore
  - Envision It! TE p. 92
  - TE p. 92; SE p. 57

- Explain and Elaborate
  - TE pp. 92-93; SE p. 57
  - Synthesize; Apply; Draw Conclusions TE p. 93

STEM Activity - Cool Down
  - TE p. 82
  - SE p. 46-53
  - TE p. 83

Evaluate
  - TE pp. 104-105

Unit Cumulative Activities
  - TE pp. 109a-109b
  - TE p. 107
  - Inquiry Investigate It!- How can the sun make temperature change? TE p. 98 SE p. 60
  - Inquiry Investigate It: Guided- TE p. 102
  - TE p. 99; SE p. 61
## Pemberton Township School District
### Unit Planner

- **Big World My World**

### Additional learning opportunities/strategies:
- Utilize other Pearson resources, online resources, and/or web links to support learning.

### Additional resources:
- Multi-Disciplinary Center Flip Chart
- Science Song Coloring Book
- [http://www.bozemanscience.com/](http://www.bozemanscience.com/)
- [https://www.teachingchannel.org/ngss](https://www.teachingchannel.org/ngss)

## Differentiation

<table>
<thead>
<tr>
<th>High-Achieving Students</th>
<th>On Grade Level Students</th>
<th>Struggling Students</th>
<th>Special Needs/ELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Advanced Leveled Content Reader</td>
<td>- On-Level Content Reader</td>
<td>- Structure lessons around questions that are authentic, relate to students’ interests, social/family background and knowledge of their community.</td>
<td>- Provide ELL students with multiple literacy strategies.</td>
</tr>
<tr>
<td>- Use project-based science learning to connect science with observable phenomena.</td>
<td>- Use project-based science learning to connect science with observable phenomena.</td>
<td>- Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques—auditory/visual aids; pictures, illustrations,</td>
<td>- Use the ELL lesson plan to identify content and language objectives.</td>
</tr>
<tr>
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<td></td>
<td>- Use project-based science learning to connect science with observable phenomena.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Use Envision it! to frontload the lesson by activating</td>
</tr>
</tbody>
</table>
- Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies).
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and prior knowledge and building background knowledge.
- Utilize the ELL handbook for best practices and instructional strategies.
### Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding.

- Use project-based science learning to connect science with observable phenomena.
- Structure the learning around explaining or solving a social or community-based issue.
# Pemberton Township School District
## Unit Planner

### Unit Title: Kindergarten - Unit 4 - Basic Needs of Living Things

### Stage 1: Desired Results

**Standards & Indicators:**

- **NJSLS – Science**
  - LS1.C: ORGANIZATION FOR MATTER AND ENERGY FLOW IN ORGANISMS
    - K-LS1-1
  - ESS3.A: NATURAL RESOURCES
    - K-ESS3-1
  - ESS2.E: BIOGEOLOGY
    - K-ESS2-2
- **NJSLS – Math**
  - MP.2
  - MP.4
  - K.CC
  - K.MD.A.2
- **NJSLS – English Language Arts**
  - W.K.1
  - R.K.1
  - W.K.7
  - W.K.2
  - SL.K.5
- **NJSLS – Technology**
  - 8.1.2.A.1
  - 8.1.2.A.2
  - 8.1.2.A.4
- **NJSLS – 21st Century Life and Careers**
  - 9.2.4.A.3
  - 9.2.4.A.4

### Central Idea / Enduring Understanding:

- In this unit of study, students develop an understanding of what plants and animals need to survive and the relationship between their needs and

### Essential/Guiding Question:

- How do plants and get the things that they need to live and grow?
- What do plants need to live and grow?
where they live. Students compare and contrast what plants and animals need to survive and the relationship between the needs of living things and where they live. The crosscutting concepts of patterns and systems and system models are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in developing and using models, analyzing and interpreting data, and engaging in argument from evidence. Students are also expected to use these practices to demonstrate understanding of the core ideas.

<table>
<thead>
<tr>
<th>Content:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Scientists look for patterns and order when making observations about the world.</td>
</tr>
<tr>
<td>• Patterns in the natural and human-designed world can be observed and used as evidence.</td>
</tr>
<tr>
<td>• Plants need water and light to live and grow.</td>
</tr>
<tr>
<td>• Systems in the natural and designed world have parts that work together.</td>
</tr>
<tr>
<td>• Living things need water, air, and resources from the land, and they live in places that have the things they need.</td>
</tr>
<tr>
<td>• Systems in the natural and designed world have parts that work together.</td>
</tr>
<tr>
<td>• Plants can change their environments.</td>
</tr>
<tr>
<td>• Things that people do to live comfortably can affect the world around them.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skills (Objectives):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]</td>
</tr>
</tbody>
</table>
| • Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and
People can make choices that reduce their impacts on the land, water, air, and other living things. (The focus of this unit is on plants and animals. Even though this particular concept is part of K-ESS2-2, it will not be addressed in this unit of study, but will instead be addressed in Unit 5, Humans.)

leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.

Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]

Stage 2: Assessment Evidence

Performance Task(s):
- STEM Activity
- Formative Assessments
- Guided Inquiry Labs
- Performance Expectation Activities
- Inquiry Investigate It!

Other Evidence:
- Post-activity discussion questions
- Review Vocabulary Smart Cards
- Students make connections to the “Unlock the Big ?” in each lesson.
- Have students restate or contrast topics in each lesson

Stage 3: Learning Plan

Learning Opportunities/Strategies:
Pearson Chapter 2
- Inquiry: Students will predict and then observe what happens when a wilted plant is given water.
- STEM Activity - Scratch Away
- Read Aloud - Where do these animals get food?

Resources:
Pearson Chapter 2
- Inquiry
  - Try It! - Do plants need water? (TE p. 42; SE p. 21)
- STEM TE pp. 44-47
- Read Aloud - TE p. 40
<table>
<thead>
<tr>
<th>Pearson Chapter 2 - Lesson 2: What are living things?</th>
<th>Pearson Chapter 2 - Lesson 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Engage and Explore</td>
<td>● Engage and Explore</td>
</tr>
<tr>
<td>○ Envision It!- Tell about living things.</td>
<td>○ Envision It! TE p. 50</td>
</tr>
<tr>
<td>○ Activate prior knowledge</td>
<td>○ TE p. 50; SE p. 34</td>
</tr>
<tr>
<td>○ Students will obtain information about living things.</td>
<td></td>
</tr>
<tr>
<td>● Explain and Elaborate</td>
<td>● Explain and Elaborate</td>
</tr>
<tr>
<td>○ What are living things?</td>
<td>○ TE pp. 50-51; SE p. 15</td>
</tr>
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<td></td>
<td>○ Analyze and Apply TE p. 51</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Pearson Chapter 2 - Lesson 3: What do plants need?</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Engage and Explore</td>
</tr>
<tr>
<td>○ Envision It!- Tell about plants.</td>
</tr>
<tr>
<td>○ Activate prior knowledge</td>
</tr>
<tr>
<td>○ Students will investigate to describe patterns of what plants need.</td>
</tr>
<tr>
<td>● Explain and Elaborate</td>
</tr>
<tr>
<td>○ What do plants need?</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Pearson Chapter 2 - Lesson 4: What do animals need?</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Engage and Explore</td>
</tr>
<tr>
<td>○ Envision It! - Tell about the animal.</td>
</tr>
<tr>
<td>○ Activate prior knowledge</td>
</tr>
<tr>
<td>○ Students will provide evidence of what animals need.</td>
</tr>
<tr>
<td>● Explain and Elaborate</td>
</tr>
<tr>
<td>○ What do animals need?</td>
</tr>
</tbody>
</table>
Pemberton Township School District  
Unit Planner

- Evaluate  
  - Inquiry Investigate It! - How do some turtles stay warm in winter?  
  - Scaffolded Inquiry Investigate It! - What are some other materials turtles use to stay warm in winter?

Additional learning opportunities/strategies:
- Utilize other Pearson resources, online resources, and/or web links to support learning.

Additional resources:
- Multi-Disciplinary Center Flip Chart  
- Science Song Coloring Book  
- [http://www.bozemanscience.com/](http://www.bozemanscience.com/)  
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**Differentiation**

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  - Use project-based science learning to connect science with observable phenomena.  
  - On-Level Content Reader  
  - Use project-based science learning to connect science with observable phenomena  
  - Structure lessons around questions that are authentic, relate to students’ interests, social/family background and knowledge of  
  |  
|  |  
|  |  
|  |  

- Provide ELL students with multiple literacy strategies.  
- Utilize the ELL lesson plan to identify content and language objectives.  
- Use project-based science learning to
<table>
<thead>
<tr>
<th>Pemberton Township School District</th>
<th>Unit Planner</th>
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<tbody>
<tr>
<td></td>
<td>their</td>
</tr>
<tr>
<td></td>
<td>community.</td>
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<tr>
<td>● Provide students with</td>
<td>connect</td>
</tr>
<tr>
<td>multiple choices for how they can</td>
<td>science</td>
</tr>
<tr>
<td>represent their understandings</td>
<td>with</td>
</tr>
<tr>
<td>(e.g. multisensory techniques</td>
<td>observable</td>
</tr>
<tr>
<td>auditory/visual aids; pictures,</td>
<td>phenomena.</td>
</tr>
<tr>
<td>illustrations, graphs, charts,</td>
<td>● Use Envision it!</td>
</tr>
<tr>
<td>data tables, multimedia, modeling)</td>
<td>to frontload</td>
</tr>
<tr>
<td></td>
<td>the lesson by</td>
</tr>
<tr>
<td>● Provide opportunities for</td>
<td>activating</td>
</tr>
<tr>
<td>students to connect with people</td>
<td>prior</td>
</tr>
<tr>
<td>of similar backgrounds (e.g.</td>
<td>knowledge and</td>
</tr>
<tr>
<td>conversations via digital tool</td>
<td>building</td>
</tr>
<tr>
<td>such as SKYPE, experts from the</td>
<td>background</td>
</tr>
<tr>
<td>● Utilize the ELL handbook for</td>
<td>knowledge.</td>
</tr>
<tr>
<td>best practices and</td>
<td>●</td>
</tr>
<tr>
<td>instructional strategies.</td>
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</table>
- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).
- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate...
| Use project-based science learning to connect science with observable phenomena. |
| Structure the learning around explaining or solving a social or community-based issue. |
# Unit Title: Kindergarten - Unit 5 - Basic Needs of Humans

## Stage 1: Desired Results

### Standards & Indicators:

- **NJSLS – Science**
  - **ESS3.C: HUMAN IMPACTS ON EARTH SYSTEMS**
    - K-ESS3-1
  - **ETS1.B: DEVELOPING POSSIBLE SOLUTIONS**
    - K-ESS3-3
  - **ETS1.A: DEFINING AND DELIMITING AN ENGINEERING PROBLEM**
    - K-2-ETS1-1

- **NJSLS – Math**
  - MP.2
  - MP.4
  - MP.5
  - 2.MD.D.10

- **NJSLS – English Language Arts**
  - W.K.2
  - RI.2.1
  - W.2.6
  - W.2.8

- **NJSLS – Technology**
  - 8.1.2.A.1
  - 8.1.2.A.2
  - 8.1.2.A.4

- **NJSLS – 21st Century Life and Careers**
  - 9.2.4.A.3
  - 9.2.4.A.4

### Central Idea / Enduring Understanding:

- In this unit of study, students develop an understanding of what humans need to survive and the relationship between their needs and where they live. The crosscutting concept of cause and effect

### Essential/Guiding Question:

- How can humans reduce their impact on the land, water, air, and other living things in the local environment?
- What do plants and animals need?
is called out as the organizing concept for the disciplinary core ideas. Students demonstrate grade-appropriate proficiency in asking questions and defining problems, and in obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.

<table>
<thead>
<tr>
<th>Content:</th>
<th>Skills (Objectives):</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Events have causes that generate observable patterns.</td>
<td>● Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]</td>
</tr>
<tr>
<td>● Things that people do to live comfortably can affect the world around them.</td>
<td>● Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</td>
</tr>
<tr>
<td>● People can make choices that reduce their impacts on the land, water, air, and other living things.</td>
<td></td>
</tr>
<tr>
<td>● Designs can be conveyed through sketches, drawings, or physical models.</td>
<td></td>
</tr>
<tr>
<td>● These representations are useful in communicating ideas for a problem’s solutions to other people.</td>
<td></td>
</tr>
<tr>
<td>● A situation that people want to change or create can be approached as a problem to be solved through engineering.</td>
<td></td>
</tr>
<tr>
<td>● Asking questions, making observations, and gathering information are helpful in thinking about problems.</td>
<td></td>
</tr>
<tr>
<td>● Before beginning to design a solution, it is important to clearly understand the problem.</td>
<td></td>
</tr>
</tbody>
</table>
## Pemberton Township School District
### Unit Planner

### Stage 2: Assessment Evidence

<table>
<thead>
<tr>
<th>Performance Task(s):</th>
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<td>● Guided Inquiry Labs</td>
<td>● Students make connections to the “Unlock the Big ?” in each lesson.</td>
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<td>● Performance Expectation Activities</td>
<td>● Have students restate or contrast topics in each lesson</td>
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<tr>
<td>● Inquiry Investigate It!</td>
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### Other Evidence:
- Post-activity discussion questions
- Review Vocabulary Smart Cards
- Students make connections to the “Unlock the Big ?” in each lesson.
- Have students restate or contrast topics in each lesson

### Stage 3: Learning Plan

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<tbody>
<tr>
<td>Pearson Chapter 2</td>
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</tr>
<tr>
<td>● Biography</td>
<td>● Biography- John Gruener</td>
</tr>
<tr>
<td></td>
<td>■ TE p. 61; SE p. 40</td>
</tr>
</tbody>
</table>

#### Pearson Chapter 2 - Lesson 5: What do you need?
- ● Engage and Explore
  - ○ Envision It! - Tell about the people.
  - ○ Activate prior knowledge
  - ○ Students will analyze what they need.
- ● Explain and Elaborate
  - ○ What do you need?

#### Pearson Chapter 2 - Lesson 6: How do living things affect where they live?
- ● Engage and Explore
  - ○ Envision It! - Tell about living and nonliving things.
  - ○ Activate prior knowledge
  - ○ Students will investigate how

- ● Explain and Elaborate
  - ○ TE pp. 56-57; SE p. 37
  - ○ Infer and Compare TE p. 57

#### Pearson Chapter 2 - Lesson 5:
- ● Engage and Explore
  - ○ Envision It! TE p. 56
  - ○ TE p. 56; SE p. 37

#### Pearson Chapter 2 - Lesson 6:
- ● Engage and Explore
  - ○ Envision It! TE p. 58
  - ○ TE p. 58; SE p. 38
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>things affect where they live.</td>
<td>● Explain and Elaborate</td>
</tr>
<tr>
<td>● Explain and Elaborate</td>
<td>○ How do living things affect where they live?</td>
</tr>
<tr>
<td>Pearson Chapter 3 - Lesson 6:</td>
<td>● Explain and Elaborate</td>
</tr>
<tr>
<td>What is recycling?</td>
<td>○ TE pp. 58-59; SE p. 38</td>
</tr>
<tr>
<td>● Engage and Explore</td>
<td>○ Infer and Explain TE p. 59</td>
</tr>
<tr>
<td>○ Envision It! - Tell about a</td>
<td>● Engage and Explore</td>
</tr>
<tr>
<td>recycling bin.</td>
<td>○ TE p. 58</td>
</tr>
<tr>
<td>○ Activate prior knowledge</td>
<td>○ TE p. 96; SE p. 59</td>
</tr>
<tr>
<td>○ Students will ask questions</td>
<td>● Explain and Elaborate</td>
</tr>
<tr>
<td>about items that can be recycled.</td>
<td>○ TE pp. 96-97; SE p. 59</td>
</tr>
<tr>
<td>● Explain and Elaborate</td>
<td>○ Infer, Cause and Effect, and Apply TE p. 97</td>
</tr>
<tr>
<td>○ What can you recycle?</td>
<td>● Evaluate</td>
</tr>
<tr>
<td>● Evaluate</td>
<td>○ TE pp. 66-67</td>
</tr>
<tr>
<td>○ Formative Assessment</td>
<td>● Unit Cumulative Activities</td>
</tr>
<tr>
<td>● Unit Cumulative Activities</td>
<td>○ Performance-Based Assessment</td>
</tr>
<tr>
<td>○ Performance-Based Activity</td>
<td>○ TE p. 69</td>
</tr>
<tr>
<td></td>
<td>○ TE p. 109e</td>
</tr>
<tr>
<td>Additional learning opportunities/strategies:</td>
<td>Additional resources:</td>
</tr>
<tr>
<td>● Utilize other Pearson resources, online resources, and/or web links to support learning.</td>
<td>● Multi-Disciplinary Center Flip Chart</td>
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<td></td>
<td>● <a href="http://www.bozemanscience.com/">http://www.bozemanscience.com/</a></td>
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<tr>
<td></td>
<td>● <a href="http://ngss.nsta.org/">http://ngss.nsta.org/</a></td>
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<tr>
<td></td>
<td>● <a href="https://www.teachingchannel.org/ngss">https://www.teachingchannel.org/ngss</a></td>
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## Pemberton Township School District
### Unit Planner

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<td>• Provide ELL students with multiple literacy strategies.</td>
</tr>
<tr>
<td>• Use project-based science learning to connect science with observable phenomena</td>
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<td>• Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques - auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).</td>
<td>• Utilize the ELL lesson plan to identify content and language objectives.</td>
</tr>
<tr>
<td></td>
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<td>• Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via</td>
<td>• Use Envision it! to frontload the lesson by activating prior knowledge and building background knowledge.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>multimedia, modeling).</td>
<td>• Utilize the ELL handbook for best practices and instructional strategies.</td>
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</table>

- Use project-based science learning to connect

digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies).

- Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences).

- Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding.
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<th>science with observable phenomena.</th>
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<td>● Structure the learning around explaining or solving a social or community-based issued</td>
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