

# Bike Basic

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## VITAL INFORMATION

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**Subject(s):** Mathematics, Physical Education, Science

**Topic or Unit of Study:** Equations of motion

**Grade/Level:** 5

**Objective:** Learn how to drive a bike.

**Summary:**

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## IMPLEMENTATION

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**Learning Context:**

**Procedure:**

**Differentiated Instruction:**

**Sample Student Products:**

**Collaboration:** Students will work collaboratively & individually. Students will work in groups of 4.

**Time Allotment:** 1 class period. 1.25 Hrs per class.

**Author's Comments & Reflections:**

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## MATERIALS AND RESOURCES

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**Instructional Materials:**

**Resources:**

- Technology resources:  
Printer
- The number of computers required is 4.

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## STANDARDS & ASSESSMENT

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**Standards:**

 **AZ- Arizona Academics Standards**

• **Subject :** Science (previous)

• **Standard 1:** Science As Inquiry.  
Students understand and use the processes of scientific investigation and scientific ways of knowing. They are able to design, conduct, describe and evaluate these

investigations. They are able to understand and apply concepts that unify scientific disciplines.

- **Grade Range** : ESSENTIALS (Grades 4-8)

Students know and are able to do all of the above and the following:

- **Key Idea/Concept 1SC-E5**: Analyze the processes, parts and subsystems of a bicycle, a clock or other mechanical or electrical device

- **Grade** : Grades 4-5

- **Performance Objective PO 1**: Identify the parts of a subsystem within a system

- **Performance Objective PO 2**: Describe the functions of the parts of a subsystem

- **Performance Objective PO 3**: State cause-and-effect relationships among components in mechanical or electrical devices

- **Key Idea/Concept 1SC-E6**: Analyze scientific reports from magazines, television or other media

- **Grade** : Grades 4-5

- **Performance Objective PO 1**: Analyze the reliability of scientific information from a variety of sources

- **Performance Objective PO 2**: Use evidence to support or refute a conclusion drawn from a scientific report

- **Standard 3**: Personal and Social Perspectives in Science And Technology.

Students understand the impact of science on human activity and the environment and are proficient in the uses of technology as they relate to science.

- **Grade Range** : ESSENTIALS (Grades 4-8)

Students know and are able to do all of the above and the following:

- **Key Idea/Concept 3SC-E3**: Identify a specific need and propose a solution or product that addresses this need, taking into consideration various factors

- **Grade** : Grades 4-5

- **Performance Objective PO 1**: Identify a human or environmental need

- **Performance Objective PO 2**: Describe the various factors affecting the need

- **Performance Objective PO 3**: Propose a solution or product that addresses the need

- **Key Idea/Concept 3SC-E4**: Implement a proposed solution or design and evaluate its merit

- **Grade** : Grades 4-5

- **Performance Objective PO 1**: Evaluate the possible strengths and weaknesses of a given solution to a problem

- **Standard 5**: Physical Science.

Students understand the nature of matter and energy including their forms, the changes they undergo and their interactions.

- **Grade Range** : ESSENTIALS (Grades 4-8)

- **Key Idea/Concept 5SC-E3**: Show that energy exists in many forms and can be transferred in many ways

- **Grade** : Grades 4-5

- **Performance Objective PO 1**: Identify various types of energy sources

- **Performance Objective PO 2**: Describe how energy is transferred

- **Subject** : Technology (OLD)

- **Standard 1**: Fundamental Operations and Concepts.

Students understand the operations and function of technology systems and are proficient in the use of technology.

- **Grade Range** : ESSENTIALS (Grades 4-8)

- **Key Idea/Concept 1T-E1**: Communicate about technology using developmentally appropriate and accurate terminology See: Language Arts (VP-E)

- **Performance Objective PO 2**: Use basic vocabulary related to systems (e.g., network, infrastructure, Internet, Intranet, LAN, WAN, Ethernet, firewall, server, TCP-IP)

- **Standard 2**: Social, Ethical and Human Issues.

Students understand the social, ethical and human issues related to using technology in their daily lives and demonstrate responsible use of technology systems,

information, and software.

- **Grade Range** : ESSENTIALS (Grades 4-8)

- **Key Idea/Concept 2T-E2:** Exhibit legal and ethical behaviors when using technology and information, and discuss consequences of misuse

- **Performance Objective PO 1:** Follow the rules for deciding when permission is needed for using the work of others, (e.g., some sites specify whether permission is required or not, some work is in public domain)

- **Performance Objective PO 3:** Provide complete citations from electronic media (See: 5T-E2, PO5)

- **Standard 5:** Technology Research Tools.

Students will utilize technology-based research tools to locate and collect information pertinent to the task as well as evaluate and analyze information from a variety of sources.

Note: The performance objectives described in Standard 5 rely upon the mastery of skills and understanding of concepts from earlier standards

- **Grade Range** : ESSENTIALS (Grades 4 – 8)

Students know and are able to do all of the above and the following:

- **Key Idea/Concept 5T-E1:** Locate information from electronic resources

- **Performance Objective PO 1:** Identify electronic research resources

- **Key Idea/Concept 5T-E2:** Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources

- **Performance Objective PO 2:** Gather research from a variety of electronic sources and identify the most appropriate information for answering the research question

- **Performance Objective PO 4:** Identify the components of a URL to determine the source of the information

- **Performance Objective PO 5:** Identify the author of the information found from electronic resources and determine whether the author is an authority, displays bias and is a primary or secondary source

**Assessment/Rubrics:**