



Standards Addressed in GK–2

Lesson 1

Science:

<i>NSES Content Standards</i>	
Code	Standard
4ASI1.4	Use data to construct a reasonable explanation.
4ASI1.5	Communicate investigations and explanations.
4BPS1.1	Objects have many observable properties.
4BPS2.1	The position of an object can be described by locating it relative to another object or the background.
4BPS2.2	An object's motion can be described by tracing and measuring its position over time.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
2A/P1*	Circles, squares, triangles, and other shapes can be found in nature and in things that people build.
2A/P3	Things move, or can be made to move, along straight, curved, circular, back-and-forth, and jagged paths.

Math:

<i>NCTM Standards</i>	
Code	Standard
	Describe qualitative change, such as a student's growing taller.
	Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.
	Describe attributes and parts of two- and three-dimensional shapes.
	Describe, name, and interpret relative positions in space and apply ideas about relative position.
	Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.
	Sort and classify objects according to their attributes and organize data about the objects.
	Represent data using concrete objects, pictures, and graphs.
	Describe parts of the data and the set of data as a whole to determine what the data show.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.
1C/P2	In doing science, it is often helpful to work with a team and to share findings with others. All team members should reach their own individual conclusions, however, about what the findings mean.
4F/P1	Things move in many different ways, such as straight, zigzag, round and round, back and forth, and fast and slow.

Technology:

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
8B/P1*	Some kinds of materials are better than others for making any particular thing. Materials that are better in some ways, such as stronger or cheaper, may be worse in other ways, such as heavier or harder to cut.
11B/P3	One way to describe something is to say how it is and isn't like something else.

<i>ITEA Standards</i>	
Code	Standard
Standard 4.	<p>Students will develop an understanding of the cultural, social, economic, and political effects of technology</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that the use of tools or machines can be harmful or helpful
Standard 10.	<p>Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that asking questions and making observations helps a person to figure out how things work.
Standard 12.	<p>Students will develop abilities to use and maintain technological products and systems.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade will discover how things work

21st-Century Skills:

Code	Standard
<i>Critical Thinking and Problem Solving</i>	Exercising sound reasoning in understanding
	Framing, analyzing and synthesizing information in order to solve problems and answer questions
<i>Communication and Collaboration</i>	Articulating thoughts and ideas clearly and effectively through speaking and writing
	Assuming shared responsibility for collaborative work
<i>Flexibility & Adaptability</i>	Articulating thoughts and ideas clearly and effectively through speaking and writing
	Assuming shared responsibility for collaborative work
	Working appropriately and productively with others

Lesson 2

Science:

<i>NSES Content Standards</i>	
Code	Standard
4ASI1.4	Use data to construct a reasonable explanation.
4ASI1.5	Communicate investigations and explanations.
4ASI2.2	Scientists use different kinds of investigations depending on the questions they are trying to answer.
4ASI2.4	Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge).
4BPS1.1	Objects have many observable properties, including weight.
4BPS2.1	The position of an object can be described by locating it relative to another object or the background.
4BPS2.2	An object's motion can be described by tracing and measuring its position over time.
4BPS2.3	The position and motion of objects can be changed by pushing or pulling. The size of the change is related to the strength of the push or pull.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1A/P1	When a science investigation is done the way it was done before, we expect to get a very similar result.

1A/P2*	When a science investigation is done again in a different place, we expect to get a very similar result.
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.
2A/P3	Things move, or can be made to move, along straight, curved, circular, back-and-forth, and jagged paths.
4F/P2	The way to change how something is moving is to give it a push or a pull.

Math:

<i>NCTM Standards</i>	
Code	Standard
	Describe qualitative change, such as a student's growing taller.
	Describe, name, and interpret relative positions in space and apply ideas about relative position.
	Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.
	Recognize the attributes of length, volume, weight, area, and time.
	Compare and order objects according to these attributes.
	Represent data using concrete objects, pictures, and graphs.
	Describe parts of the data and the set of data as a whole to determine what the data show.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.
1C/P2	In doing science, it is often helpful to work with a team and to share findings with others. All team members should reach their own individual conclusions, however, about what the findings mean.
4F/P1	Things move in many different ways, such as straight, zigzag, round and round, back and forth, and fast and slow.
11D/P1	Things in nature and things people make have very different sizes, weights, ages, and speeds.
12B/P5*	Make quantitative estimates of time intervals and the lengths and weights of familiar objects.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

Technology:

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
12D/P2*	Draw pictures that portray some features of the thing being described.
11B/P3	One way to describe something is to say how it is and isn't like something else.

<i>ITEA Standards</i>	
Code	Standard
Standard 10.	<p>Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that asking questions and making observations helps a person to figure out how things work.
Standard 12.	<p>Students will develop abilities to use and maintain technological products and systems.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should discover how things work

21st-Century Skills:

Code	Standard
<i>Critical Thinking and Problem Solving</i>	Exercising sound reasoning in understanding
	Framing, analyzing and synthesizing information in order to solve problems and answer questions
<i>Communication and Collaboration</i>	Articulating thoughts and ideas clearly and effectively through speaking and writing
	Assuming shared responsibility for collaborative work
<i>ICT Literacy</i>	Using digital technology, communication tools and/or networks appropriately to access, manage, integrate, evaluate, and create information in order to function in a knowledge economy
<i>Initiative & Self-Direction</i>	Monitoring one's own understanding and learning needs
	Defining, prioritizing and completing tasks without direct oversight
	Utilizing time efficiently and managing workload
	Demonstrating commitment to learning as a lifelong process

<i>Social & Cross-Cultural Skills</i>	Working appropriately and productively with others
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Lesson 3

Science:

<i>NSES Content Standards</i>	
Code	Standard
4ASI1.4	Use data to construct a reasonable explanation.
4ASI1.5	Communicate investigations and explanations.
4ASI2.2	Scientists use different kinds of investigations depending on the questions they are trying to answer.
4ASI2.4	Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge).
4BPS1.1	Objects have many observable properties, including weight.
4BPS2.1	The position of an object can be described by locating it relative to another object or the background.
4BPS2.2	An object's motion can be described by tracing and measuring its position over time.
4BPS2.3	The position and motion of objects can be changed by pushing or pulling. The size of the change is related to the strength of the push or pull.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1A/P1	When a science investigation is done the way it was done before, we expect to get a very similar result.
1A/P2*	When a science investigation is done again in a different place, we expect to get a very similar result.
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.
1B/P3	Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
4F/P1	Things move in many different ways, such as straight, zigzag, round and round, back and forth, and fast and slow.
4F/P2	The way to change how something is moving is to give it a push or a pull.
4G/P1	Things near the earth fall to the ground unless something holds them up.

Math:

<i>NCTM Standards</i>	
Code	Standard
	Describe qualitative change, such as a student's growing taller.
	Describe, name, and interpret relative positions in space and apply ideas about relative position.
	Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.
	Recognize the attributes of length, volume, weight, area, and time.
	Compare and order objects according to these attributes.
	Represent data using concrete objects, pictures, and graphs.
	Describe parts of the data and the set of data as a whole to determine what the data show.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
11D/P1	Things in nature and things people make have very different sizes, weights, ages, and speeds.
12B/P5*	Make quantitative estimates of time intervals and the lengths and weights of familiar objects.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

Technology:

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
11C/P2	People can keep track of some things, seeing where they come from and where they go.
11B/P3	One way to describe something is to say how it is and isn't like something else.

<i>ITEA Standards</i>	
Code	Standard
Standard 4.	Students will develop an understanding of the cultural, social, economic, and political effects of technology <ul style="list-style-type: none">○ Students in kindergarten through second grade should

	the use of tools or machines can be harmful or helpful
Standard 10.	<p>Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that asking questions and making observations helps a person to figure out how things work.
Standard 12.	<p>Students will develop abilities to use and maintain technological products and systems.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade will discover how things work
Standard 13.	<p>Students will develop abilities to assess the impact of products and systems.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that collect information about everyday products and systems by asking questions

21st-Century Skills:

Code	Standard
<i>Critical Thinking and Problem Solving</i>	Exercising sound reasoning in understanding
	Framing, analyzing and synthesizing information in order to solve problems and answer questions
<i>Communication and Collaboration</i>	Articulating thoughts and ideas clearly and effectively through speaking and writing
	Assuming shared responsibility for collaborative work
<i>ICT Literacy</i>	Using digital technology, communication tools and/or networks appropriately to access, manage, integrate, evaluate, and create information in order to function in a knowledge economy
<i>Initiative & Self-Direction</i>	Monitoring one's own understanding and learning needs
	Defining, prioritizing and completing tasks without direct oversight
	Utilizing time efficiently and managing workload
	Demonstrating commitment to learning as a lifelong process
<i>Social & Cross-Cultural Skills</i>	Working appropriately and productively with others

Lesson 4

Science:

<i>NSES Content Standards</i>	
Code	Standard
4ASI1.3	Employ simple equipment and tools to gather data and extend the senses.
4ASI1.4	Use data to construct a reasonable explanation.
4ASI1.5	Communicate investigations and explanations.
4ASI2.3	Simple instruments such as magnifiers, thermometers, rulers, provide more information than scientists obtain using only their senses.
4ASI2.4	Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge).
4ASI2.6	Scientists review and ask questions about the results of other scientists' work.
4BPS1.1	Objects have many observable properties that can be measured.
4BPS2.1	The position of an object can be described by locating it relative to another object or the background.
4BPS2.2	An object's motion can be described by tracing and measuring its position over time.
4BPS2.3	The position and motion of objects can be changed by pushing or pulling. The size of the change is related to the strength of the push or pull.
4EST2.5	Tools help scientists make better observations, measurements, and equipment for investigations.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1A/P1	When a science investigation is done the way it was done before, we expect to get a very similar result.
1A/P2*	When a science investigation is done again in a different place, we expect to get a very similar result.
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.
1B/P2	Tools such as thermometers, magnifiers, rulers, or balances often give more information about things than can be obtained by just observing things unaided.
1B/P3	Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
1C/P2	In doing science, it is often helpful to work with a team and to share findings with others. All team members should reach their own individual conclusions, however, about what the findings mean.

4F/P1	Things move in many different ways, such as straight, zigzag, round and round, back and forth, and fast and slow.
4F/P2	The way to change how something is moving is to give it a push or a pull.

Math:

<i>NCTM Standards</i>	
Code	Standard
	Describe qualitative change, such as a student's growing taller.
	Describe, name, and interpret relative positions in space and apply ideas about relative position.
	Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.
	Recognize the attributes of length, volume, weight, area, and time.
	Compare and order objects according to these attributes.
	Understand how to measure using nonstandard and standard units;
	Use tools to measure.
	Represent data using concrete objects, pictures, and graphs.
	Describe parts of the data and the set of data as a whole to determine what the data show.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
9A/P1*	Numbers can be used to count things, place them in order, measure them, or name them.
11D/P1	Things in nature and things people make have very different sizes, weights, ages, and speeds.
12B/P1*	Use whole numbers in ordering, counting, identifying, measuring, and describing objects and events.
12C/P4*	Measure the length in whole units of objects using rulers and tape measures.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

Technology:

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
3A/P1	Tools are used to do things better or more easily and to do some things that could not otherwise be done at all. In technology, tools are used to observe, measure, and make things.
11C/P2	People can keep track of some things, seeing where they come from and where they go.
11B/P3	One way to describe something is to say how it is and isn't like something else.
12D/P2*	Draw pictures that portray some features of the thing being described.
12D/P3**	Interpret pictures, drawings, and videos of real-world objects and events.

<i>ITEA Standards</i>	
Code	Standard
Standard 4.	<p>Students will develop an understanding of the cultural, social, economic, and political effects of technology</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that the use of tools or machines can be harmful or helpful
Standard 10.	<p>Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that asking questions and making observations helps a person to figure out how things work.
Standard 12.	<p>Students will develop abilities to use and maintain technological products and systems.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade will discover how things work

21st-Century Skills:

Code	Standard
<i>Critical Thinking and Problem Solving</i>	Exercising sound reasoning in understanding

	Framing, analyzing and synthesizing information in order to solve problems and answer questions
<i>Communication and Collaboration</i>	Articulating thoughts and ideas clearly and effectively through speaking and writing
	Exercising flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
	Assuming shared responsibility for collaborative work
<i>ICT Literacy</i>	Using digital technology, communication tools and/or networks appropriately to access, manage, integrate, evaluate, and create information in order to function in a knowledge economy
<i>Initiative & Self-Direction</i>	Monitoring one's own understanding and learning needs
	Defining, prioritizing and completing tasks without direct oversight
	Utilizing time efficiently and managing workload
	Demonstrating commitment to learning as a lifelong process
<i>Social & Cross-Cultural Skills</i>	Working appropriately and productively with others

Lesson 5

Science:

<i>NSES Content Standards</i>	
Code	Standard
4ASI2.4	Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge).
4BPS1.1	Objects have many observable properties that can be measured.
4BPS1.2	Objects are made of one or more materials, such as paper, wood and metal.
4BPS2.1	The position of an object can be described by locating it relative to another object or the background.
4BPS2.2	An object's motion can be described by tracing and measuring its position over time.
4BPS2.3	The position and motion of objects can be changed by pushing or pulling. The size of the change is related to the strength of the push or pull.
4FSPSP5.2	Science and technology have greatly improved food quality and quantity, transportation, health, sanitation, and communication.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to

	the things and noting what happens.
1B/P2	Tools such as thermometers, magnifiers, rulers, or balances often give more information about things than can be obtained by just observing things unaided.
1B/P3	Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
4F/P1	Things move in many different ways, such as straight, zigzag, round and round, back and forth, and fast and slow.
4F/P2	The way to change how something is moving is to give it a push or a pull.
8C/P2	People burn fuels such as wood, oil, coal, or natural gas, or use electricity, to cook their food and warm their houses.

Math:

<i>NCTM Standards</i>	
Code	Standard
	Describe qualitative change, such as a student's growing taller.
	Describe, name, and interpret relative positions in space and apply ideas about relative position.
	Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.
	Recognize the attributes of length, volume, weight, area, and time.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
9A/P1*	Numbers can be used to count things, place them in order, measure them, or name them.
11D/P1	Things in nature and things people make have very different sizes, weights, ages, and speeds.
12B/P1*	Use whole numbers in ordering, counting, identifying, measuring, and describing objects and events.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

Technology:

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
3A/P1	Tools are used to do things better or more easily and to do some things that could not otherwise be done at all. In technology, tools are used to observe, measure, and make things.
11A/P1	Most things are made of parts.
11A/P3	When parts are put together, they can do things that they couldn't do by themselves.
11B/P1	Many toys are like real things in some ways but not others. They may not be the same size, are missing many details, or are not able to do all of the same things.
11B/P2	A model of something is different from the real thing but can be used to learn something about the real thing.
11B/P3	One way to describe something is to say how it is and isn't like something else.
12D/P2*	Draw pictures that portray some features of the thing being described.
12D/P3**	Interpret pictures, drawings, and videos of real-world objects and events.

<i>ITEA Standards</i>	
Code	Standard
Standard 1.	<p>Students will develop an understanding of the characteristics and scope of technology.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> all people use tools and techniques to help them do things.
Standard 2.	<ul style="list-style-type: none"> ● Students will develop an understanding of the core concepts of technology. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> ▪ systems have parts or components that work together to accomplish a goal. ▪ people plan in order to get things done.
Standard 4.	<p>Students will develop an understanding of the cultural, social, economic, and political effects of technology</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> the use of tools or machines can be harmful or helpful
Standard 9.	<ul style="list-style-type: none"> ● Students will develop an understanding of engineering design.

	<ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> ▪ the engineering design process includes identifying a problem, looking for ideas, developing solutions, and sharing solutions with others. ▪ expressing ideas with others verbally and through sketches and models is an important part of the design process.
Standard 10.	<p>Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that asking questions and making observations helps a person to figure out how things work.
Standard 11.	<ul style="list-style-type: none"> ● Students will develop the abilities to apply the design process. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade will <ul style="list-style-type: none"> ▪ brainstorming people’s needs and wants and pick some problems that can be solved through the design process. ▪ build or construct an object using the design process. ▪ investigate how things are made and how they can be improved.
Standard 18.	<ul style="list-style-type: none"> ● Students will develop an understanding of and be able to select and use transportation technologies. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that vehicles move people or goods from one place to another in water, air, or space and on land.

21st-Century Skills:

Code	Standard
<i>Critical Thinking and Problem Solving</i>	Exercising sound reasoning in understanding
	Understanding the interconnections among systems

	Framing, analyzing and synthesizing information in order to solve problems and answer questions
<i>Communication and Collaboration</i>	Articulating thoughts and ideas clearly and effectively through speaking and writing
<i>Initiative & Self-Direction</i>	Monitoring one's own understanding and learning needs
	Demonstrating commitment to learning as a lifelong process

Lesson 6

Science:

<i>NSES Content Standards</i>	
Code	Standard
4ASI1.4	Use data to construct a reasonable explanation.
4ASI1.5	Communicate investigations and explanations.
4ASI2.4	Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge).
4BPS1.1	Objects have many observable properties that can be measured.
4BPS2.1	The position of an object can be described by locating it relative to another object or the background.
4BPS2.2	An object's motion can be described by tracing and measuring its position over time.
4BPS2.3	The position and motion of objects can be changed by pushing or pulling. The size of the change is related to the strength of the push or pull.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1A/P1	When a science investigation is done the way it was done before, we expect to get a very similar result.
1A/P2*	When a science investigation is done again in a different place, we expect to get a very similar result.
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.
1B/P3	Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
2A/P3	Things move, or can be made to move, along straight, curved, circular, back-and-forth, and jagged paths.
4F/P1	Things move in many different ways, such as straight, zigzag, round and

	round, back and forth, and fast and slow.
4F/P2	The way to change how something is moving is to give it a push or a pull.

Math:

<i>NCTM Standards</i>	
Code	Standard
	Describe qualitative change, such as a student's growing taller.
	Describe quantitative change, such as a student's growing two inches in one year.
	Investigate and predict the results of putting together and taking apart two- and three-dimensional shapes.
	Describe, name, and interpret relative positions in space and apply ideas about relative position.
	Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.
	Recognize the attributes of length, volume, weight, area, and time.
	Recognize and apply mathematics in contexts outside of mathematics

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
9A/P1*	Numbers can be used to count things, place them in order, measure them, or name them.
11D/P1	Things in nature and things people make have very different sizes, weights, ages, and speeds.
12B/P1*	Use whole numbers in ordering, counting, identifying, measuring, and describing objects and events.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

Technology:

<i>NSES Content Standards</i>	
Code	Standard
4EST1.3	Children should develop abilities to work individually and collaboratively and to use suitable tools, techniques, and quantitative measurements when appropriate.
4EST1.4	Evaluate a product or design.
4EST1.5	Student abilities should include oral, written, and pictorial communication

	of the design process and product.
4EST2.2	People have always had problems and invented tools and techniques (ways of doing something) to solve problems.
4FSPSP5.2	Science and technology have greatly improved food quality and quantity, transportation, health, sanitation, and communication.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
3A/P2	When trying to build something or to get something to work better, it usually helps to follow directions if there are any or to ask someone who has done it before for suggestions.
3B/P1*	People may not be able to actually make or do everything that they can design.
8B/P1*	Some kinds of materials are better than others for making any particular thing. Materials that are better in some ways, such as stronger or cheaper, may be worse in other ways, such as heavier or harder to cut.
8B/P2	Several steps are usually involved in making things.
3A/P1	Tools are used to do things better or more easily and to do some things that could not otherwise be done at all. In technology, tools are used to observe, measure, and make things.
11A/P1	Most things are made of parts.
11A/P2	Something may not work if some of its parts are missing.
11A/P3	When parts are put together, they can do things that they couldn't do by themselves.
11B/P1	Many toys are like real things in some ways but not others. They may not be the same size, are missing many details, or are not able to do all of the same things.
11B/P2	A model of something is different from the real thing but can be used to learn something about the real thing.
11B/P3	One way to describe something is to say how it is and isn't like something else.
12C/P3*	Make something out of paper, cardboard, cloth, wood, plastic, metal, or existing objects that can actually be used to perform a task.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.
12D/P2*	Draw pictures that portray some features of the thing being described.
12D/P3**	Interpret pictures, drawings, and videos of real-world objects and events.

<i>ITEA Standards</i>	
Code	Standard
Standard 1.	<p>Students will develop an understanding of the characteristics and scope of technology.</p> <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> all people use tools and techniques to help them do things.
Standard 2.	<ul style="list-style-type: none"> ● Students will develop an understanding of the core concepts of technology. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> ▪ systems have parts or components that work together to accomplish a goal. ▪ people plan in order to get things done.
Standard 6.	<ul style="list-style-type: none"> ● Students will develop an understanding of the role of society in the development and use of technology. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> products are made to meet individual needs and wants.
Standard 8.	<ul style="list-style-type: none"> ● Students will develop an understanding of the attributes of design. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> ▪ everyone can design solutions to a problem. ▪ design is a creative process.
Standard 9.	<ul style="list-style-type: none"> ● Students will develop an understanding of engineering design. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that <ul style="list-style-type: none"> ▪ the engineering design process includes identifying a problem, looking for ideas, developing solutions, and sharing solutions with others. ▪ expressing ideas with others verbally and through sketches and models is an important part of the design process.
Standard 11.	<ul style="list-style-type: none"> ● Students will develop the abilities to apply the design process. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade will <ul style="list-style-type: none"> ▪ brainstorming people’s needs and wants and pick some problems that can be solved through the design process. ▪ build or construct an object using the design

	<ul style="list-style-type: none"> ▪ investigate how things are made and how they can be improved.
Standard 18.	<ul style="list-style-type: none"> • Students will develop an understanding of and be able to select and use transportation technologies. <ul style="list-style-type: none"> ○ Students in kindergarten through second grade should learn that vehicles move people or goods from one place to another in water, air, or space and on land.

21st-Century Skills:

Code	Standard
<i>Creativity and Innovation</i>	Demonstrating originality and inventiveness in work
	Developing, implementing, and communicating new ideas to others
<i>Critical Thinking and Problem Solving</i>	Exercising sound reasoning in understanding
	Making complex choices and decisions
	Understanding the interconnections among systems
	Framing, analyzing and synthesizing information in order to solve problems and answer questions
<i>Communication and Collaboration</i>	Articulating thoughts and ideas clearly and effectively through speaking and writing
<i>Initiative & Self-Direction</i>	Monitoring one's own understanding and learning needs
	Defining, prioritizing and completing tasks without direct oversight
	Utilizing time efficiently and managing workload
	Demonstrating commitment to learning as a lifelong process
<i>Productivity & Accountability</i>	Setting and meeting high standards and goals for delivering quality work on time

Lesson 7

Science:

<i>NSES Content Standards</i>	
Code	Standard
4ASI1.4	Use data to construct a reasonable explanation.
4ASI1.5	Communicate investigations and explanations.

4ASI2.4	Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge).
4ASI2.6	Scientists review and ask questions about the results of other scientists' work.
4BPS1.1	Objects have many observable properties that can be measured.
4BPS1.2	Objects are made of one or more materials, such as paper, wood and metal.
4BPS2.1	The position of an object can be described by locating it relative to another object or the background.
4BPS2.2	An object's motion can be described by tracing and measuring its position over time.
4BPS2.3	The position and motion of objects can be changed by pushing or pulling. The size of the change is related to the strength of the push or pull.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
1A/P1	When a science investigation is done the way it was done before, we expect to get a very similar result.
1A/P2*	When a science investigation is done again in a different place, we expect to get a very similar result.
1B/P1	People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.
1B/P3	Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
2A/P3	Things move, or can be made to move, along straight, curved, circular, back-and-forth, and jagged paths.
4F/P1	Things move in many different ways, such as straight, zigzag, round and round, back and forth, and fast and slow.
4F/P2	The way to change how something is moving is to give it a push or a pull.

Math:

<i>NCTM Standards</i>	
Code	Standard
	Describe qualitative change, such as a student's growing taller.
	Describe quantitative change, such as a student's growing two inches in one year.
	Investigate and predict the results of putting together and taking apart

	two- and three-dimensional shapes.
	Describe, name, and interpret relative positions in space and apply ideas about relative position.
	Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.
	Recognize the attributes of length, volume, weight, area, and time.
	Recognize and apply mathematics in contexts outside of mathematics

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
9A/P1*	Numbers can be used to count things, place them in order, measure them, or name them.
11D/P1	Things in nature and things people make have very different sizes, weights, ages, and speeds.
12B/P1*	Use whole numbers in ordering, counting, identifying, measuring, and describing objects and events.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

Technology:

<i>NSES Content Standards</i>	
Code	Standard
4EST1.3	Children should develop abilities to work individually and collaboratively and to use suitable tools, techniques, and quantitative measurements when appropriate.
4EST1.4	Evaluate a product or design.
4EST1.5	Student abilities should include oral, written, and pictorial communication of the design process and product.

<i>AAAS Project 2061 Benchmarks</i>	
Code	Standard
3A/P2	When trying to build something or to get something to work better, it usually helps to follow directions if there are any or to ask someone who has done it before for suggestions.
3B/P1*	People may not be able to actually make or do everything that they can design.
8B/P1*	Some kinds of materials are better than others for making any particular thing. Materials that are better in some ways, such as stronger or cheaper,

	may be worse in other ways, such as heavier or harder to cut.
8B/P2	Several steps are usually involved in making things.
3A/P1	Tools are used to do things better or more easily and to do some things that could not otherwise be done at all. In technology, tools are used to observe, measure, and make things.
11A/P1	Most things are made of parts.
11A/P2	Something may not work if some of its parts are missing.
11A/P3	When parts are put together, they can do things that they couldn't do by themselves.
11B/P1	Many toys are like real things in some ways but not others. They may not be the same size, are missing many details, or are not able to do all of the same things.
11B/P2	A model of something is different from the real thing but can be used to learn something about the real thing.
11B/P3	One way to describe something is to say how it is and isn't like something else.
12C/P3*	Make something out of paper, cardboard, cloth, wood, plastic, metal, or existing objects that can actually be used to perform a task.
12D/P1*	Describe and compare real-world objects in terms of number, shape, texture, size, weight, color, and motion.

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<i>Initiative & Self-Direction</i>	Monitoring one's own understanding and learning needs
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