

Main Criteria: Forward Education
Secondary Criteria: Common Core State Standards
Subjects: Mathematics, Science, Technology Education
Grades: 7, 8, Key Stage 3

Forward Education

Smart Farming with Hydroponics & LED Grow Lights

Common Core State Standards

Mathematics

Grade 7 - Adopted: 2010

STRAND / DOMAIN		Mathematical Practices
CATEGORY / CLUSTER	CCSS.M ath.Practi ce.MP1	Make sense of problems and persevere in solving them.
CATEGORY / CLUSTER	CCSS.M ath.Practi ce.MP2	Reason abstractly and quantitatively.
CATEGORY / CLUSTER	CCSS.M ath.Practi ce.MP3	Construct viable arguments and critique the reasoning of others.
CATEGORY / CLUSTER	CCSS.M ath.Practi ce.MP4	Model with mathematics.
CATEGORY / CLUSTER	CCSS.M ath.Practi ce.MP6	Attend to precision.
CATEGORY / CLUSTER	CCSS.M ath.Practi ce.MP7	Look for and make use of structure.
CATEGORY / CLUSTER	CCSS.M ath.Practi ce.MP8	Look for and express regularity in repeated reasoning.
STRAND / DOMAIN		The Number System
CATEGORY / CLUSTER	CCSS.M ath.Cont ent.7.NS. A	Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
STANDARD	CCSS.M ath.Cont ent.7.NS .A.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

EXPECTATION	CCSS.M ath.Conte nt.7.NS.A. 1.b	Understand $p + q$ as the number located a distance $ q $ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
-------------	--	---

EXPECTATION CCSS.Math.Content.7.NS.A.1.d Apply properties of operations as strategies to add and subtract rational numbers.

STRAND / DOMAIN		The Number System
CATEGORY / CLUSTER	CCSS.Math.Content.7.NS.A	Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
STANDARD	CCSS.Math.Content.7.NS.A.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

EXPECTATION CCSS.Math.Content.7.NS.A.2.a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

EXPECTATION CCSS.Math.Content.7.NS.A.2.c Apply properties of operations as strategies to multiply and divide rational numbers.

STRAND / DOMAIN		Expressions and Equations
CATEGORY / CLUSTER	CCSS.Math.Content.7.EE.B	Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
STANDARD	CCSS.Math.Content.7.EE.B.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

EXPECTATION CCSS.Math.Content.7.EE.B.4.a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

**Common Core State Standards
Mathematics
Grade 8 - Adopted: 2010**

STRAND / DOMAIN		Mathematical Practices
CATEGORY / CLUSTER	CCSS.Math.Practice.MP1	Make sense of problems and persevere in solving them.
CATEGORY / CLUSTER	CCSS.Math.Practice.MP2	Reason abstractly and quantitatively.

CATEGORY / CLUSTER	CCSS.Math.Practice.MP3	Construct viable arguments and critique the reasoning of others.
CATEGORY / CLUSTER	CCSS.Math.Practice.MP4	Model with mathematics.
CATEGORY / CLUSTER	CCSS.Math.Practice.MP6	Attend to precision.
CATEGORY / CLUSTER	CCSS.Math.Practice.MP7	Look for and make use of structure.
CATEGORY / CLUSTER	CCSS.Math.Practice.MP8	Look for and express regularity in repeated reasoning.

STRAND / DOMAIN		Expressions and Equations
CATEGORY / CLUSTER	CCSS.Math.Content.8.EE.C	Analyze and solve linear equations and pairs of simultaneous linear equations.
STANDARD	CCSS.Math.Content.8.EE.C.7	Solve linear equations in one variable.

EXPECTATION	CCSS.Math.Content.8.EE.C.7.a	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).
EXPECTATION	CCSS.Math.Content.8.EE.C.7.b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

**Common Core State Standards
Science
Grade 7 - Adopted: 2010**

STRAND / DOMAIN	CCSS.ELA-Literacy.RST.6-8	Reading Standards for Literacy in Science and Technical Subjects
CATEGORY / CLUSTER		Key Ideas and Details
STANDARD	CCSS.ELA-Literacy.RST.6-8.2	Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

STRAND / DOMAIN	CCSS.EL A- Literacy. RST.6-8	Reading Standards for Literacy in Science and Technical Subjects
CATEGORY / CLUSTER		Integration of Knowledge and Ideas

STANDARD CCSS.EL Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that
A- gained from reading a text on the same topic.
Literacy.R
ST.6-8.9

STRAND / DOMAIN	CCSS.EL A- Literacy. RST.6-8	Reading Standards for Literacy in Science and Technical Subjects
CATEGORY / CLUSTER		Range of Reading and Level of Text Complexity

STANDARD CCSS.EL By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band
A- independently and proficiently.
Literacy.R
ST.6-8.10

**Common Core State Standards
Science
Grade 8 - Adopted: 2010**

STRAND / DOMAIN	CCSS.EL A- Literacy. RST.6-8	Reading Standards for Literacy in Science and Technical Subjects
CATEGORY / CLUSTER		Key Ideas and Details

STANDARD CCSS.EL Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior
A- knowledge or opinions.
Literacy.R
ST.6-8.2

STRAND / DOMAIN	CCSS.EL A- Literacy. RST.6-8	Reading Standards for Literacy in Science and Technical Subjects
CATEGORY / CLUSTER		Integration of Knowledge and Ideas

STANDARD CCSS.EL Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that
A- gained from reading a text on the same topic.
Literacy.R
ST.6-8.9

STRAND / DOMAIN	CCSS.EL A- Literacy. RST.6-8	Reading Standards for Literacy in Science and Technical Subjects
CATEGORY / CLUSTER		Range of Reading and Level of Text Complexity

STANDARD	CCSS.EL A- Literacy.R ST.6-8.10	By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.
----------	--	---