Variables and Expressions
## Student Activity

Name _____

Class _____

Open the TI-Nspire document *Variables_and_Expressions.tns.*

If the numbers that can be substituted for the symbol *x* can vary,
we call *x* a *variable*. This activity lets you change the value for *x* on
a number line and see the effect on an algebraic expression
involving *x*.

Variables and Expressions

Move along the number line and observe the
changes in the values of the variable and the
expressions.
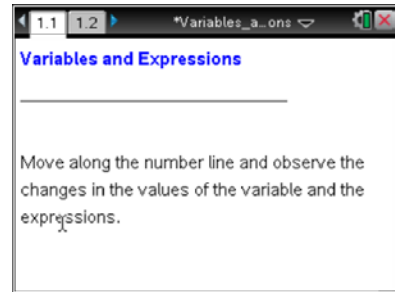
Move to page 1.2.

Press ⌈ctrl⌋▶ and ⌈ctrl⌋◀ to
navigate through the lesson.

1. As you grab the point and move the arrow beneath the number line, what changes?
   What stays the same?

2. Wade says that when *x* is negative, the value of $3(x) + {-}4$ is always negative. Explain
   why he is right or wrong.

3. a. Find a value of the variable *x* that causes the expression $3(x) + {-}4$ to equal 17.

   b. Estimate a value of the variable *x* that causes the expression $3(x) + {-}4$ to equal 15.
      Explain your reasoning.

4. Find a value for *x* that will make the value of the expression $3(x) + {-}4$ equal to -4.

5. a. If the value of *x* is increased by 1, how does the value of the expression change?

   b. How is this change related to the expression?

6. a. Write an expression you think will increase by 5 when the value of x is increased by 1.

   b. Give some examples to support your reasoning.

7. Write an expression that will not vary (change in value) when the value of x is increased by 1. Explain your reasoning.