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Please enjoy this complimentary excerpt from The Mathematics Lesson-Planning Handbook, Grades 6-8 by Lois A. Williams, Beth McCord Kobett, and Ruth Harbin Miles. In this sample excerpt, learn how to construct your own learning intentions and success criterias for your lesson plans. These intentions help students take ownership of their learning.

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## WHAT ARE LEARNING INTENTIONS?

You begin the lesson-planning process by identifying the **learning intention**. The learning intention is “a statement of what students are expected to learn from the lesson” (Hattie et al., 2016). The learning intention serves two purposes. First, it informs your design of the learning experience by focusing you and students on deep learning rather than on completing activities. Second, it provides clarity to your students about their goal for the lesson. When students know the learning intention, they are more likely to focus on the lesson and take ownership for learning (Hattie et al., 2016). To ensure that the learning is rich and purposeful, students need to be active participants in discussing and understanding how the mathematics task or activity connects to the learning intention. Teachers design mathematics, language, and social learning intentions.

## WHAT ARE MATHEMATICS LEARNING INTENTIONS?

Mathematics learning intentions are aligned to the content standards. They focus on mathematics knowledge, skills, and/or concepts. The National Council of Teachers of Mathematics’ (NCTM’s) (2014b) *Principles to Action: Ensuring Mathematical Success for All* identifies the importance of mathematics learning intentions in the first Exemplary Teaching Practice:

Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions. (p. 10)

The mathematics learning intention is not a restatement of the standard. Rather, it is a scaffolded, student-friendly statement that reflects the part of the standard you are currently teaching. To design a mathematics learning intention, first begin with the standard and then construct one or more learning intentions using student-friendly language written from the students’ point of view (see Figure 4.1).

Figure 4.1

Standard	Mathematics Learning Intention
Recognize and represent proportional relationships between quantities.	I can compute unit rates.
<b>a.</b> Decide whether two quantities are in a proportional relationship.	I can determine whether two quantities represent a proportional relationship.
<b>b.</b> Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	I can recognize, represent, and explain proportions using tables, graphs, equations, and diagrams.
<b>c.</b> Represent proportional relationships by equations.	I can verbally describe proportional relationships.
<b>d.</b> Explain what a point $(x, y)$ on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ , where $r$ is the unit rate.	

You can also connect prior knowledge to mathematics learning intentions as you prompt students to share and talk about what they have already learned and how this connects to what they will be learning next. Some middle school teachers prompt students to ask questions and pose “wonders” about what they will be learning, activating students’ prior knowledge and creating curiosity about new learning (Figure 4.2).

**Figure 4.2**

**I Wonder . . .**

How are the formulas for volumes of cones, cylinders, and spheres related?

How does an increase in the radius or height affect the volume?

If a sphere and a cylinder had the same radius, which would have a greater volume?

Who uses these formulas in their jobs?

## **WHAT ARE LANGUAGE AND SOCIAL LEARNING INTENTIONS?**

### **Language Learning Intentions**

Language learning intentions connect to the Standards for Mathematical Practice (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010), state process standards, and mathematical vocabulary. Students are expected to develop and defend mathematical arguments, understand and explain their reasoning, and critique each other’s reasoning.

When you create language learning intentions in addition to the mathematics content learning intentions, you help your students develop and use rich mathematics vocabulary (Hattie et al., 2016). Middle school students need to use new mathematics vocabulary often so it can be learned, integrated, and applied. Furthermore, English Language Learners are better supported with additional opportunities to speak about mathematics.

One way you can prompt language opportunities is to encourage your students to explain and justify their thinking. By providing specific language intentions, you create expectations for all of your students for using mathematical language in your classroom. You can develop the language learning intentions for the unit and then revisit them daily as they align to the mathematics learning intentions (Figure 4.3).

Figure 4.3

Standard	Mathematics Learning Intentions	Language Learning Intentions
Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions)	<p>I can</p> <ul style="list-style-type: none"> <li>Compare and contrast multiple representations of (tables, graphs, equations) of two functions</li> <li>Determine whether the relationship is a function</li> <li>Identify the rate of change and y-intercept for a linear function</li> </ul>	<p>I can</p> <ul style="list-style-type: none"> <li>Describe, compare, and explain tables, graphs, and equations</li> <li>Use mathematical vocabulary like <i>linear function</i>, <i>rate of change</i>, and <i>y-intercept</i> accurately and in context</li> </ul>

### Social Learning Intentions

Social learning intentions also connect to the Standards for Mathematical Practice (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) and state process standards. Social learning intentions focus on particular social skills that students need to exhibit as they work together to collaboratively solve problems and communicate their thinking. Middle school students naturally construct learning through games, collaboration, and problem solving in formal and informal settings. Since learning is socially constructed through communication and collaboration with others (Vygotsky, 1978), you can tailor these social learning intentions to reflect what your students specifically need. For instance, you can construct your social learning intentions to highlight the social skills your students need so they can work together to solve problems (Hattie et al., 2016). As with the language learning intentions, you can develop social learning intentions for the unit and specify the particular intentions you want students to work toward.

#### Example: Andy

Andy, a sixth-grade teacher, has been steadily working on helping his sixth graders solve problems in cooperative problem-solving groups. He decides to include four social learning intentions (Hattie et al., 2016) to target his sixth graders' listening skills (see Figure 4.4).

Figure 4.4

Learning Intentions for Cooperative Group Problem Solving
<p>We are learning to do the following:</p> <ul style="list-style-type: none"> <li>Listen when others are speaking</li> <li>Look at our group members when they are speaking</li> <li>Ask a question about what our group members shared with us</li> <li>Summarize what we heard our group members say</li> </ul>

### Example: Bianca

Bianca is one of many teachers responsible for integrating the Standards for Mathematical Practices (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) and other state process standards that ask students to “construct viable arguments and critique the reasoning of others” (para. 3). To address this, she regularly arranges her seventh graders in pairs to help solve a “debate” between two fictitious students who cannot agree on a mathematical solution. This debate was inspired by Ridgeway, Swan, and Burkhardt’s (2001) thinking routine, Always, Sometimes, or Never True (Figure 4.5).

**Figure 4.5**

#### **Who Wins the Debate?**

Mariella and Mona were having a debate. Mariella says that she has a trick for comparing number values. She says that when comparing two numbers, the one with the greater number of digits ALWAYS has the greater value. Mona disagrees and says this is SOMETIMES true. Who is right? Be prepared to present your thinking to another pair of students.

Bianca’s students must work together to understand the reasoning presented by the students in the example, explain their own reasoning to each other, come to an agreed-upon decision, and present their solution to another pair of students. Without such clear social and language learning intentions, the students might become confused about Bianca’s expectation for this learning activity and miss out on important learning.

### **WHAT ARE SUCCESS CRITERIA?**

Students also need to know how to tell when they have learned the mathematics. While learning intentions provide the purpose of the learning, the **success criteria** describe what the learning looks like when students understand and can do the mathematics they are learning. Clear success criteria can increase learner motivation because students know when they have learned and do not need to rely on a sticker, smiley face, or checkmark. Success criteria also prompt deeper, more meaningful learning because teachers can make sure that the success criteria mirror the learning intentions and their students’ learning needs. While all students are guided by the same learning intentions, you can differentiate the success criteria to match your learners (Wiliam, 2011).

## HOW DO LEARNING INTENTIONS CONNECT TO THE SUCCESS CRITERIA?

It is also critical for you to include the students in understanding, monitoring, and celebrating achievement of the success criteria. Hattie and Yates (2013) identify five learning components that are valuable to determining learning intentions and success criteria:

1. *Challenge.* Teachers must construct learning experiences that appropriately mix what students know with what they do not know.
2. *Commitment.* Teachers should also develop lessons that engage students' commitment to the learning.
3. *Confidence.* Students and teachers need to have confidence that the students will be able to learn the material. Confidence can be generated from the students' prior learning experiences, the teacher's skill in listening and providing targeted feedback, the selection of appropriate lesson tasks, and appropriate peer feedback.
4. *High expectations.* Teachers need to have high expectations for all students and believe that they can and will learn.
5. *Conceptual understanding.* Students need to be able to develop rich understanding of mathematics content.

As you write success criteria, be sure to use student-friendly language that focuses specifically on indicators of success.

### Example: Rodrigo

When Rodrigo writes success criteria for his sixth graders, he uses the same success criteria stem ("I know I am successful when ...") to purposely trigger students' ownership. He then revisits the success criteria in individual progress conferences with students who struggle. During these conferences, he first focuses the students on the successes they have achieved. Then he identifies one or two criteria they have not yet achieved. Rodrigo emphasizes the word *yet* to help his students understand that they are on their way. Together, Rodrigo and his students determine strategies for improvement.



The seventh-grade math team, Kia, Alix, Kyle, and Bryan, has been working on bringing forward the language learning intentions. All of them have been working hard on developing students' use of vocabulary and increasing discourse opportunities. They know that when students have more time to talk about their ideas, they are more engaged and seem to remember more. Kyle suggests, "What if we have the students reflect on their development regarding the language learning intentions? We could ask them to think about how they engage in discourse!" Alix replies, "Love this! I think our students are ready for this!"

### Learning Intention(s): Mathematical Learning Intentions

We are learning to:

- Represent equivalent forms of numbers
- Write an equation to represent a real-world problem
- Apply properties of operations

### Language Learning Intentions

We are learning to:

- Use the terms relationship and equation
- Explain how an equation represents a real-world problem

### Social Learning Intentions

We are learning to:

- Listen to the ideas of others
- Respectfully disagree with the mathematical arguments of others

### Success Criteria (written in student voice):

I know that I am successful when I can:

- Write an equation, table, and graph for a linear relationship
- Recognize a linear, nonlinear, and no relationship from a graph
- Use the terms relationship and equation
- Explain how an equation represents a real-world problem
- Listen to the ideas of others
- Respectfully disagree with the mathematical arguments of others

See the complete lesson plan in Appendix A on page 192.



**How could you communicate learning intentions and success criteria with your families? Briefly write some ideas below.**

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## Under Construction

Your turn! Construct learning intentions and success criteria for the standard you previously identified.

**Learning Intentions  
(mathematical/language/social):**

**Success Criteria  
(written in student voice):**



Download the full Lesson-Planning Template from [resources.corwin.com/mathlessonplanning/6-8](https://resources.corwin.com/mathlessonplanning/6-8)

Remember that you can use the online version of the lesson plan template to begin compiling each section into the full template as your lesson plan grows.

*The Mathematics Lesson-Planning Handbook, Grades 6–8: Your Blueprint for Building Cohesive Lessons* by Lois A. Williams, Beth McCord Kobett, and Ruth Harbin Miles. Copyright © 2019 by Corwin. All rights reserved.