



LAUNCH, EXPLORE, DISCUSS LESSON FRAMEWORK

WHY DOES THE FRAMEWORK OF A LESSON MATTER?

Over two decades of research speaks to the value of allowing students to engage in productive struggle by posing cognitively demanding tasks that students can explore (Smith et al., 2008). Further, students from various backgrounds with varying levels of understanding have equal access to mathematics when teachers build lessons around the exploration of tasks (NCTM, 2014).

Additionally, lessons that begin with a teacher-led or teacher-facilitated mini lesson followed by practice do not allow for learners to engage in productive struggle and develop conceptual understanding of mathematics concepts (Munter, Stein, & Smith, 2015; Polly, 2017). In elementary schools, mathematics curricular resources include varied instructional frameworks with differing potential to promote problem solving and opportunities for productive struggle. In line with recommendations from the National Council for Teachers of Mathematics (NCTM, 2014), we describe the launch-explore-discuss model which frames a lesson around a cognitively demanding task(s) that promote opportunities for productive struggle (Lappan & Phillips, 2009).

ELEMENTS OF LAUNCH-EXPLORE-DISCUSS

The **Launch-Explore-Discuss** model focuses on the teacher serving as a facilitator of their students' mathematical understanding by posing meaningful tasks, supporting students by providing opportunities for students to collaborate, use materials, and by posing questions to support task completion. To use this framework effectively, teachers must have clearly articulated mathematical goals for the lesson and identify ahead of time possible strategies that students may use to solve a mathematical task. The table to the right details each phase of the launch-explore-discuss model.

The **Launch** portion of a lesson is a brief opportunity for the teacher to ensure that students understand the task they will solve. This includes the context of the task and the mathematical focus of the task. The introduction should be brief and interactive through teachers posing questions or turn-and-talk types of models. There should not be any direct teaching at the beginning of a lesson.

The **Explore** portion is the heart of the lesson. Students work in pairs or small groups to solve the task. Teachers pose

QUESTIONS TO CONSIDER WITH COLLEAGUES

1. In what ways can I effectively launch tasks while still maintaining the cognitive demand of the tasks?
2. What is my role as a teacher to support students' exploration of mathematical tasks?
3. What strategies will help me facilitate a discussion of mathematical ideas about a task while also highlighting important concepts?

Launch-Explore-Discuss Framework

Launch: Teacher introduces a cognitively demanding task to the students, ensures students are clear on the expectations and that they have access to materials (e.g., manipulatives, calculators, etc.).

Explore: Students work on the task with their partner or in small groups. Here the teacher's role is to pose questions to support task exploration and to elicit student thinking.

Discuss: The class comes together to discuss the problem, with a focus on solution strategies. The teacher may select a main focus based on observations and facilitates the discussion. Teacher may then instruct students as needed.

Follow-up Activities: Students continue to work on the concept throughout the remainder of the lesson with activities, math games, and small group work. The teacher can also work with small groups for differentiated needs.

questions to redirect or extend learning and take note of specific strategies that they want discussed later in the lesson. Students should have ownership of the mathematical ideas and strategies that they use and should generate mathematical representations such as models with manipulatives, pictures, equations, or explanations about how they are solving the task.

The **Discuss** portion of the lesson is student-owned and teacher-facilitated, as students share the various strategies and representations that they used during the Explore portion. The teacher should have in mind specific strategies they want to have students share and know which students used those strategies. If there is a strategy that the teacher wanted to be shared that was not done by a student, the teacher has the choice of either introducing the strategy to the entire class or waiting until the follow-up activities in the next portion of the lesson and bringing that strategy up to a small group of students.

Scenario to Reflect on:

Mrs. Toomey's second grade class is exploring ways to solve the task: *There are some birds in the park. That morning 18 more birds arrived. If there are now 41 birds in the park how many birds were there at the beginning of the day?* The students who answered the task correctly used the two strategies shown in the box. Mrs. Toomey noticed seven of her students incorrectly added 41 and 18 to get an answer of 59. Mrs. Toomey wanted to show those students a strategy where she could plot both 18 and 41 on the number line and based on the story realize that the answer was the distance between 18 and 41. Should Mrs. Toomey introduce this to the entire class or just a small group for those who could not solve the task?

Strategy 1	Strategy 2
$41 - 18 = \underline{\quad}$	$41 - 18 = \underline{\quad}$
$41 - 1 = 40$	$11 - 8 = 3$
$40 - 10 = 30$	$30 - 10 = 20$
$30 - 7 = 23$	$20 + 3 = 23$

When considering if the teacher should share the strategy with the entire class the teacher should consider these questions:

- How many students need to work with this strategy in order to extend their mathematical thinking? What is the benefit of seeing the strategy to students who already have a strong understanding of the mathematical concepts in the task?
- Will the introduction of the strategy to the entire class be enough to help students who may benefit?
- Do those students need to experience the strategy and have opportunities to apply it in a small group setting?

In some cases, the teacher may pose a brief follow-up task to check students' understanding before moving onto other activities.

WHAT HAPPENS AFTER LAUNCH-EXPLORE-DISCUSS IN A LESSON?

After the cycle of launch-explore-discuss in a lesson, teachers can have their students work on a variety of tasks. In many elementary schools, teachers organize activities in centers, stations, or math workshop. During this time, teachers have the option of working with small groups of children where they can provide targeted instruction on specific mathematics concepts. Students who are not with teachers in small groups work on tasks, such as math games, problem solving, digital learning work on devices, or other activities. It is imperative that teachers include activities that students can do independently or with a partner without teacher guidance since they likely will be teaching a small group elsewhere in the classroom. Some teachers conclude the lesson with an independent task, such as an exit ticket in order to assess students' progress. These tasks give students immediate data to inform the teacher about possible next steps to support students' understanding.

PLANNING FOR LAUNCH-EXPLORE-DISCUSS

As you plan to use the launch-explore-discuss model we encourage you to focus on the tasks that you select for students to explore and engage with during the lesson (Smith, et al., 2008). For more information on tasks we invite you to read the briefs on tasks available at <http://nc2ml.org>.

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SUGGESTED CITATION

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