# Jigsaw Reading: The 5 E's Instructional Model

**Reading #1: ENGAGE**

**A Five-Stage Instructional Model**

In 1985 BSCS developed a constructivist instructional model organized around five words beginning with the letter *E*: Engage, Explore, Explain, Elaborate, and Evaluate.

The focus of the 5 E's is on a structured common learning experience presented to cooperative-learning teams in five linked stages.

Students use their experiences to construct and develop knowledge and meaning as they progress through each of the stages.

This model has two fundamental characteristics in common with most real-world learning: It involves learning by doing, and it asks learners to collaborate with peers and experts in meeting their responsibilities.

The beginning of each discrete instructional segment—whether it's a project, an experiment, or a lesson—starts with an Engage activity.

**The Goal of the Engage Activity Is to Do One or More of the Following:**

- activate students' imaginations
- create interest in the lesson/project that follows
- provoke thinking around a specific concept or question
- generate questions, experiences, ideas for discussion and analysis
- build a pool of information that can be synthesized
- establish a baseline of understanding regarding a concept, skill, or process
- uncover students' misconceptions regarding a topic or concept
- provide a common starting point to the instructional unit

**What Does a Good Engage Activity Look Like?**

Engage activities are introductory. Some can be relatively brief, like a do now or a mini-lesson, that launches into the Explore lesson. Or the Engage activity may take up the whole period.

Engage activities should be well structured to ensure successful student participation and interest. They can focus on the topic, the concept, the skills, or the anticipated product of the upcoming instructional unit.

**Possible Engage Activities Include:**

- brainstorming of ideas, questions, explanations, or experiences
- observing and describing an object, substance, artifact
- listing or classifying items;
- taking a survey
- responding to a reading, song, image, performance that captures a concept or provokes some student questions

**An Example of an Engage Activity**

If you were doing a life cycle unit in science you might present each table with mealworms (darkling beetles) in a small box with some items of food. Students would then record observations regarding the mealworms (physical descriptions, behavioral descriptions, etc.) to develop their observational skills.

The mealworms would provide the interest and motivation. The Engage activity could end with a sharing of ideas for learning new information regarding the organisms, which would lead to exploring ideas about possible experiments.

What matters is that they always have a clear intent, succeed in capturing students' interest, bring students' knowledge and conceptions to the instructional table, and make a clear transition to the next of the 5 E's: Explore.

# Jigsaw Reading: The 5 E's Instructional Model

**Reading #2: EXPLORE**

**A Five-Stage Instructional Model**

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The Explore stage picks up where the Engage activity left off. It might be a whole-group sharing of information/responses that were individually, partner, or team developed during the Engage; or an entirely new experience.

Essential to a successful Explore lesson is providing students with a common, somewhat open-ended investigation.

**A Successful Explore Activity Allows Students to:**

- experiment with materials or ideas
- share their unique responses to their common experience
- document their experiments, observations, investigations, methods, concerns, successes and failures
- express the fruits of their explorations in a variety of ways

**What Does a Good Explore Activity Look Like?**

Explore activities are the entire or main part of the class period in which they are presented. They may even extend to two or more class periods, depending on the grade level or complexity of the project or activity. It is essential that students have sufficient time to meaningfully pursue their explorations.

Explores are NOT paint-by-number activities that take students down a predetermined path. Instead, they frame the exploration so that everyone has a clear and common understanding of the goal or purpose. This common understanding, however, cannot restrict the freedom or remove the responsibility of students to exercise their creativity, imaginative thinking, and emerging communication skills. Students need to play with resources, problems, and solutions in a way that makes them successful learners.

**Possible Explore activities include:**

- developing hypotheses and the means to test them
- conducting beginning experiments
- identifying and planning the elements of a presentation or performance
- modeling
- trying different tools to familiarize students with their operation and utility
- improvisational role playing;
- outlining a problem and its solution
- designing a product
- categorizing
- testing previously proposed hypotheses

**Trial and Error Is Important**

Faith in the value and necessity of trial and error as an effective learning tool is implicit in each activity planned for an Explore lesson. If your Engage activity uncovered significant misconceptions involving the basic concepts about to be studied, your exploration might test those misconceptions.

A good Explore activity is a meaningful common experience for all learners. The paths they take in pursuit of their goal should build a deep understanding of the challenge and a rich variety of experiences for students to share, compare, and evaluate.

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**Reading #3: EXPLAIN**

**A Five-Stage Instructional Model**

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The middle stage of the 5 E's is the Explain lesson. It uses the information and experiences from the previous stages to organize thoughts and understandings and to make connections to the instructional goals of the project or unit. Technical vocabulary, definitions, rules and principles, formulas, and additional content information, are generally introduced here. Information is introduced or connected with previous experiences through a variety of forms.

Explain activities might occupy full class periods or part of one, depending on the format of the explanation and the processing of information.

**During a Successful Explain Lesson, Students:**

- describe what they've learned and identify remaining questions or problems
- listen and record new vocabulary in their journals
- read and discuss new information regarding the concepts, ideas, and problems under investigation
- compare experiential understandings to new information
- identify and test principles, rules, and formulas
- share with their partner, team, or the whole class ideas and explanations
- review, rethink, and revise hypotheses, predictions, arguments, conclusions

**What Does a Good Explain Activity Look Like?**

A successful Explain lesson involves direct instruction of students by the teacher or peers and/or self-reflection by the student. It may come in the form of brief lecture, a guided discussion, group analysis of data, or a demonstration of a successful experiment

An Explain lesson should make sense of and build on students' work in the Explore; it should not undermine that work by presenting a canned explanation or text that ignores or pays only superficial attention to students' explorations.

**Possible Explain Activities Include:**

- group share and analysis of exploration results
- teacher synthesis of student questions and redirection to new resources
- jigsaw reading of new information relevant to investigation
- independent or partner reading and discussion
- teacher instruction
- simulations or recreations
- viewing and analysis of video of related investigation

**Information That Connects**

Successful Explain activities refine, refocus, and reinforce students' work, linking it to the specific content and concept goals of the instructional unit in a way that validates the process of investigation and builds students' confidence in their abilities to experiment, question, hypothesize, and make sense of their learning. They present students with new information to describe, explain, understand, revise, or extend their work. They pave the way for the Elaborate lesson to come.

# Jigsaw Reading: The 5 E's Instructional Model

**Reading #4: ELABORATE**

**A Five-Stage Instructional Model**

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Elaborate is an application and extension stage, which may involve one or more lessons. It puts into practice (or puts to the test) the learning that is the product of the Explain stage. Students may, for example, conduct redesigned experiments or use what they've learned about experiments to respond to a new object, organism, or concept with scientific analysis and a new set of experiment. Lessons in the Elaborate phase may extend over several class periods or more.

**During a Successful Elaborate, Students:**

- actively put new understandings into practice
- demonstrate understanding of technical vocabulary, principles, and rules related to instructional unit goals
- generate, evaluate, and draw fresh conclusions about new data
- present conclusions with supportive evidence
- solve new problems, test new cases, try new experiments

**What Does a Good Elaborate Activity Look Like?**

A successful Elaborate activity takes what students have learned so far and asks them to apply it freshly to a new situation or to revisit a situation where things didn't go according to plan and need the new understandings that grew out of the Explain to work. The difference between the Explore and the Elaborate is that the former is more open-ended and less technical.

By the Elaborate lesson, students are more focused and more connected to the instructional goals, its content, concepts, and language, than they were previously. They are also more independent in their approach to the content, posing and answering their own questions, identifying and resolving their own obstacles and glitches. Otherwise, the two look alike, particularly in two important respects: Students are working in pairs or teams on projects and activities; and they're getting their hands dirty with the real work of social studies and science: researching, experimenting, recording, revising, clarifying, analyzing.

**Possible Elaborate activities include:**

- creating and presenting new models for data gathering, organization and analysis
- designing and producing presentation documents, including maps, time lines, and graphs
- transferring information from one form or genre to another
- creating a museum exhibit

Some student work completed during the Evaluate stage can, indeed *should*, yield products for assessment. However, final assessment, both teacher and student self-assessment, occurs during the next stage, Evaluate, when products are shared.

# Jigsaw Reading: The 5 E's Instructional Model

**Reading #5: EVALUATE**

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It's showtime now! The Evaluate lesson(s) provide opportunities for students to display, present, explain, report, broadcast, perform, and demonstrate the fruits of their hard work. The parenthetical plural calls attention to the fact that students will need time to share their projects, experiments, activities. Rarely can such meaningful sharing be done in a single class period. During presentations, non-presenting students should be active listeners/viewers.

**During a successful Evaluate, students:**

- present, explain, and defend their work
- listen, respond, and assess or self-assess, depending on whether they are presenting or in the audience
- take notes and record responses in journals
- discuss the range of work, synthesize, and draw reasonable conclusions when appropriate
- ask new questions, pose new problems, outline new research topics
- provide positive, descriptive feedback to peers

**What Does a Good Evaluate Lesson Look Like?**

The Evaluate stage should showcase the cumulative product of students' work. Teacher assessment and peer review sheets should be part of any presentation or performance or debate so that evidence of the performance and supportive feedback can be systematically and conveniently recorded for student conferences and reports. Students should also have a paper trail in their journals, notes, and drafts that may already have been collected or may be collected after the Evaluate sharing.

In other words, a successful Evaluate lesson should be one part assessment and one part celebration. It should give students an opportunity to demonstrate their mastery of the instructional units goals and exercise developing skills. A good Evaluate lesson also lays the foundation for future learning.

**A real-world example:**

No one learns to ride a bike by simply hearing a lecture on it or just by reading the manual. You learn when you climb on a bike and wobble and fall. You learn faster when someone is coaching you, holding the handlebars or seat and then letting go, encouraging you when you fall, describing what he or she sees, finding other words for what you are supposed to be doing to keep your balance.

- **Engage**: getting that first opportunity to own and ride a bike; holding the bike in your living room or yard, putting a foot on one of the pedals; looking through the manual
- **Explore**: riding and falling for the first (and second or more times)
- **Explain**: getting instructions from your friends, family, or manual; riding with the assistance of a guiding hand
- **Elaborate**: riding without the guiding hand
- **Evaluate**: analyzing and adjusting until you get it right