JIGSAW

PURPOSE
The jigsaw is an effective collaborative learning activity designed to increase personal responsibility for learning. It is also an efficient strategy for extending the breadth and depth of learning as students can “teach one another” multiple concepts simultaneously during the same class session.

DESCRIPTION
A variety of jigsaw approaches have been developed each of which involves students teaching their peers. This tactic works best when topics are simple enough for students to teach it to their peers, but complex enough to warrant discussion and numerous strategies for instruction.

Students first work in small groups to develop knowledge about a specific topic. They help each other become “experts” and formulate ways to teach the topic to other students.

Expert Groups

After students have become competent on the topic from the expert group discussion, they are broken up into new “jigsaw” groups consisting of one student from each of the expert groups as illustrated below.

Jigsaw Groups

Each of the students is able to bring the expertise about the topic that he or she developed from the previous group and teach it to the other students in the new jigsaw group.

In designing a jigsaw activity, keep in mind that the subject must be divided into a small number of topics (3-6) for the expert groups. The number of topics will also determine how many students are in each jigsaw group.

Below are five simple steps for implementing the activity:

1. Prepare students to become experts by giving them resource material to study individually before placing them in groups.
2. Divide the students into expert groups either by student choice or teacher assignment.
3. Have students meet in their expert groups to review and master the material. Not only will students discuss the material, but they will explore how they should teach, illustrate, and give examples to their jigsaw groups.
4. Arrange students in their jigsaw groups to teach one another. Each student expert takes a turn leading the discussion on his or her particular topic. Encourage students in the group to ask questions and ensure understanding.
5. To bring closure and re-emphasize major points at the end of the session, reflect as a collective group on what was learned.

Variations
- Rather than having students work in two groups (expert and jigsaw), place students in only one group and have them form pairs to develop expertise on the topic. After discussing the topic adequately, the students rejoin the full group for teaching.
- Select a student to give a summary review of a subtopic to the entire class as closure for the activity.

Maintaining Quality
- **Check preparation.** Discourage “loafers,” students that might come unprepared, by making sure that students have read the preparation material.
- **Assign a leader.** For both the expert and jigsaw group, assign students to monitor time, moderate discussion, and keep the group on task.
- **Prepare guided questions.** Help direct group meetings toward your learning outcomes by providing questions, worksheets, or rubrics to help students self-check and focus their discussion.
- **Monitor groups.** Systematically scan and visit groups to catch misconceptions and listen for difficulties. Intervene with assistance and direction.

http://www.byui.edu/learningandteaching/
when needed.

• **Quiz students.** Test student understanding to make sure that a topic is understood or to see if additional teaching by the instructor is necessary.

it can be easy for instructors to overuse the activity. Due to its highly contrived structure it must be used selectively to keep its freshness and novelty.

• **Lack of students.** The number of students in a class may not fit the number of individuals needed for the expert and jigsaw groups. In this case, a few individuals may have to be doubled up.

### EXAMPLE

Math 110, a pre-calculus course, uses a jigsaw to help students become better acquainted with various families of functions.

Students are assigned to an expert group that focuses one type of function (quadratic, cubic, rational, radical, absolute values, exponential, or logarithmic). A guide sheet is provided for each of the expert groups to help them prepare for a 5 minute presentation that they will give in the jigsaw groups. This guide includes several characteristics of the function that need to be explained (e.g., domain, range, input, output, etc.). They post some of the information from this guide sheet online so that the instructor can monitor quality.

Students are then placed into jigsaw groups where each person presents information about their particular function in the jigsaw group. During the presentations, the other students complete a worksheet that helps them compare and contrast the various functions. At the end of the activity students should be able to name and describe differences between the various types of functions.

### TIPS

- **Use the chalkboard.** Have groups use a chalkboard to display problems or work so that the Instructor can visually monitor the groups.

- **Provide a closure activity.** By allowing students to give feedback and summarize the learning, you can help frame the activity and encourage student involvement.

- **Emphasize preparation.** Preparation by students is critical as they must know the material well enough to teach it to others. Ensure that appropriate background reading is assigned (and tested, if necessary) so students have the tools to be successful.

### PITFALLS

- **Activity overuse.** Because of its appealing nature,