

Processing in pairs, in groups, and among groups is an essential component of differentiated instruction. Kagan Cooperative Structures are excellent tools and techniques to facilitate engaging and useful student interactions. In addition, they support high levels of inquiry and discourse among students and promote metacognition. Below are some simple structures that can be used after the hands-on portion of the lab investigation has occurred.

Processing - In Pairs

Mix-Freeze-Pair – Students circulate in the classroom. When teacher calls “Freeze”, they stop. When teacher calls “Pair”, they form pairs with the classmate that is closest to them. Ask a question or give an assignment (discuss their answer to lab investigation question #). Be sure to specify a think time or use a countdown timer such as the Kagan “Timer Tools.” Partners share using Pair Discussion, RallyRobin, or Timed Pair Share (see descriptions below).

Stand Up, Hand Up, Pair Up – Say, “stand up, hand up, pair up”. Students stand up and keep one hand in the air until they find a partner. Ask a question or give an assignment (discuss their answer to lab investigation question #). Be sure to specify a think time or use a countdown timer such as the Kagan “Timer Tools.” Partners share using Pair Discussion, RallyRobin, or Timed Pair Share (see descriptions below).

Pair Discussion

Give each pair of students a stack of blank cards and pencils/pens. Alternatively, give each student a mini whiteboard and markers. Assign a topic (or lab investigation question #) to discuss. Each student thinks about the topic (or question) for a defined amount of time and records their response on a blank card or mini whiteboard. When both have finished, they discuss their individual responses.

RallyRobin – Students form pairs within a larger team. Each pair takes turns orally sharing ideas. Within the team, new pairs form to share ideas. The process continues until all pairs within the team are exhausted or time runs out.

Timed Pair Share – Pose a problem/question. In pairs, students share with a partner for a predetermined length of time while the partner listens. Then, partners switch roles. Consider using a Kagan “Timer Tools” countdown timer to alert students when to switch.

Give One, Get One – Prepare a sheet with two column headings, Give One and Get One. Ask students to consider a topic or lab investigation question(s). Provide some time for individual students to formulate their response(s). When they have a good item to “give”, they record it using their own words in the “Give One” column of their sheet. Students who have “given one” put up their hands and move to find a new partner. In pairs, students each give one and get one

idea. Students, again, raise their hands to find new partners. The process continues until time runs out or students have filled their sheets.

Processing – In Small Groups

RoundRobin, RallyRobin, or Rally Table –
See RallyRobin above.

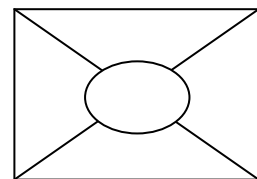
RoundRobin – Group students in teams of 4. Assign a topic or question with multiple possible answers. In teams, students respond orally, each talking, in turn, about the same amount of time. Sharing continues until time expires. When time is up, call upon students from each team to stand and share their ideas.

RallyTable – Assign a topic or question with multiple possible answers. In pairs, students take turns passing paper and pencil, each writing one answer or making a contribution. Within the team, new pairs form to share ideas. The process continues until all pairs within the team are exhausted or time runs out.

Think-Pair-Share – Ask a question or pose a problem. Students think alone about it and then form pairs to discuss the question. Call upon students to share their answers with the class.

Team Discussion – Give each team a stack of blank cards and pencils/pens. Assign a topic to discuss. Each student thinks about the topic for a defined amount of time and records their response on a blank card. When all have finished, teammates discuss the individual responses.

Consensus Placement –Assign students to groups of four. Give each group a stack of blank cards and pencils/pens. Assign a topic (or specific lab investigation questions) to discuss. Each student thinks about the topic (or question) for a defined amount of time and records their ideas on a blank card. When all have finished, they share their responses with their team. Those ideas upon which all students agree, or reach consensus, are placed in the center of the table. Alternatively, teachers can create a “placemat” for the center of the table using a large sheet of newsprint or poster paper upon which the following diagram is drawn:



Spin-N-Think – A spinner determines roles as students play a game to think about and discuss an assignment. This activity requires thinking questions and a spinner. A Spin Captain uses a spinner to make the following selections: the question, a student to answer it, and a student to paraphrase and praise the student who answered. Students have five seconds of think time between each step of the game. At the end of the round, the Spin Captain passes the spinner to another person in the group to continue the game.

Simultaneous Roundtable – Much like RoundRobin except that students record their responses on paper.

Turn-4-Thought – Prepare 16 low consensus questions and construct card decks for teams of 4 students. Each deck consists of a set of Question, Answer, Paraphrase and Praise, and Augment cards. These cards distribute tasks to student team members. For example, a card in the Question Card deck may read, “Teammember 3, read Question 4.” Before you begin, choose a “Turn Leader” to turn over the cards and direct the think time before each card is turned over.

(1) A student turns over a Question Card. After the question is read, students individually think about the question, with no talking between them. (2) A student turns over an Answer Card. The card dictates which student will answer the question. Students think over the answer that was given. (3) A student turns over a Paraphrase and Praise Card. This card directs which student is to paraphrase and praise the student who just answered the question. (4) Then, students consider the answer and decide if they can improve on it. A student turns over an Augment Card. This card selects a student to add to the answer, if they can. All students are encouraged to engage in a discussion of the question. Note: A student is allowed to praise and augment his own answer. The process continues with a new question.

Processing – Among Groups

Gallery Tour – Students move about the room as a team to look over, discuss, and give feedback to the products of other teams. The products are displayed on the desktop or on the wall using chart paper or newsprint. Visiting teams fill in a “feedback form” to provide ideas and points for clarification. Rotation continues until all teams return to their own product.

One Stray, Three Stay – At a signal, one person from the group visits another group to ask questions and get clarification. When time is up, the student returns to the home group. This process can be repeated a few more times with a new person from each group “straying” each time.

Numbered Heads Together – Students within each group number off 1-4. Teacher poses a question (i.e., from lab) and tells the group that everyone in the group must be able to answer the question. The group members stand up and work through their response making sure that everyone is conversant with the answer and can provide examples or supporting evidence. Teacher then calls on all the (a number 1-4) from each group to stand up and share their answer. Note: small white boards or chart paper would be good as all answers would be generated simultaneously thus saving time. If the question has several parts, the teacher can ask the 1’s to answer part A, the 3’s part B, etc.

Group Jigsaw – Group members number off 1-4. All the 1's collect in a spot designated by the teacher, all the 2s in another spot, etc. The teacher then gives all the 1's a task or question to answer and they all share their thinking to come up with a group answer. Students can bring their lab with them and then add to their original answer based on the group's ideas. When all groups have finalized their response, each person return to their original group and takes turns sharing what they have learned and suggesting additions to the original group's response.

Roam the Room or Roving Reporters – Assign students to teams. While the teams work, set a time for one member of each team to wander the room gathering information from other teams that might be useful to his team.

Rotating Review – Use this strategy when students need to review several labs. Assign students to teams of 4. From each lab investigation, select 1-2 questions for each group to answer. Each team should have unique questions. Record these questions on large post-it paper or newsprint. Giving each team their own color marker, allow them to record information about the topic/question for one minute. Instruct teams to include data and examples from their hands-on activities to support their answers or opinions.

Once initial responses are recorded, have teams rotate to the next group's sheet. Allow teams one minute to read the information posted by the previous team, and one minute to add new information to the posted page. Continue the rotation until all teams have visited each topic. If a team disagrees with information they see on a sheet, instruct them to place a question mark by the information for later discussion.