
TEACHING STRATEGIES

In this Teaching Strategies section you will find directions for several generic activity “structures.” MARE regularly uses these activity structures to help students talk, write, and draw about their related prior knowledge, or to distill and summarize what they have recently learned.

These generic activity structures emphasize short, small group discussions, cooperation and social skills development. They create opportunities for students to use language in a non-threatening, but highly relevant setting. You will find the activity structures referred to in specific places within each science activity in the guide. In these cases content-specific questions or statements pertaining to the activity are provided along with the note to “see the Teaching Strategies section for how to present this activity.” For example, in both the activities **SEASHORE CHARADES** (in the Biological Sciences section) and **TROUBLE AT THE TIDEPOOLS** (in the People And The Sea section), it is suggested you use the activity structure, “My Buddy Says.” Content-specific questions or prompts to use are provided right within each activity. However, the description of how to present “My Buddy Says” is found only here in the Teaching Strategies section.

We have chosen activity structures that match current research in language acquisition that shows students acquire language fastest by using, hearing, reading, and understanding it in context in non-threatening settings. Constructivist learning theory maintains that students acquire language skills and construct new concepts in science only when the new information builds on and is compared with students’ prior knowledge. These activity structures are meant to be simple and accessible, and to simultaneously help students to build their knowledge of science and their language skills. You may find the activities help students to begin working in cooperative groups by developing their social skills. We hope you will use them throughout the MARE curriculum and in other subject areas unrelated to MARE.

The activity structures that follow are arranged in alphabetical order for easy access.

Animal Corners
Brainstorming & Clustering
Class Story & Class Big Book
Illustrated Story Chart
Interactive Slide Shows
Mini-Drama
My Buddy Says
Partner parade
Splash Work quilt story

Animal Corners

Objectives

- To build inclusion
- To use communication and listening skills
- To develop oral language skills
- To determine what is already known, or
- To assess what students have learned

Materials

For each small group

- butcher or chart paper
- markers

For the class

- masking tape
- 4 different animal signs (a picture and label for each student)

Directions

Prepare four large signs, each one with a picture and label for an animal the class plans to study, or has been studying. Post a sign in each of four corners of the classroom. This activity lends itself to being done twice, once to determine what students already know about the animals and, after the main activity, to assess what they have learned.

Have the students think about which animal they are most like and then write down the name of that animal on a small slip of paper. Once all the class members have decided, have them take their slip of paper and stand under the sign of their choice. In each corner, have the group members share with each other why they selected that animal and then as a group, brainstorm and decide on several characteristics they share in common with the animal. Using chart paper and markers or crayons, have each group draw or write down their shared characteristics. Have a spokesperson for the group present their findings to the rest of the class.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- What made you decide which animal corner to go to?
- Were you surprised to see who else chose the same corner?
- What did you learn about the animals that you didn't know before?
- Why do we associate certain traits and feelings with certain animals?
- How much of what each group shared was based on actual facts about the animals?

Brainstorming & Clustering

WHAT WE ALREADY KNOW, WHAT WE WANT TO FIND OUT, AND WHAT WE FOUND OUT

Objectives

- To develop oral language skills
- To build group inclusion
- To develop organization skills
- To use language in meaningful ways
- To determine what is already known about a topic

Materials

For the class

- large sheets of butcher or chart paper
- colored markers
- scissors
- tape

Directions

Do a class brainstorm about “what we already know” about the activity’s topic. As the students make suggestions, write them in words or graphic symbols on a large piece of butcher or chart paper. Once the list is complete, cut the items apart and have the class cluster them according to what seems to go together. Tape the clustered items up on a wall together and have the class come up with a name for each clustering. These groupings are categories. Write and tape the topic of the activity on a wall and surround it with the categories as branches of the topic, and the items within the categories as offshoots of the category.

As with “what we know,” do another brainstorm about “what we want to find out.” At the end of the activity or unit finish with “what we found out.” During the activity, as the questions from the “what we want to find out” list are answered, write them down on the chart paper and physically move them on the wall to the “what we found out” list. This then becomes the group memory of the activity.

Ideas and Guidelines for Effective Brainstorming

- Write down whatever students contribute without correcting, editing, or evaluating the content. If a contribution is a misconception or is challenged by another student, you can circle it and say that there is a question about this, and the activity will help to figure out if it is a correct statement or not. If, after the activity, the class still isn't sure, then you can use unanswered questions as Beyond The Activities research projects. If a misconception is not challenged, record it on the chart and make a mental note to address and correct the misconception in the context of the activity.
- Give all students the opportunity to contribute to the brainstorm.
- Ask the students if you are recording their ideas accurately.
- If some students don't contribute ideas, start the brainstorm in small groups, or pairs, and have one student act as the spokesperson for the group. The spokesperson can say the name of the student who contributed the idea.
- Use initials next to the contributed ideas. This may help with individual portfolio assessment, and it is empowering for a student to see his name recognized for a positive contribution.
- If the students can write short sentences, have them write sentence strips, which they put up on the wall under the correct heading of "what we already know" or "what we want to find out." Sentence strips can be moved into categories easily.
- Always record the brainstorm sessions on paper rather than the chalkboard so they can be preserved, reflected on, and added to.

Reflections

At the end of the brainstorm, ask the students to think about some of the following questions and then lead a class discussion.

- Did this activity include all members of the class?
- Did it seem that classmates were listening to each other or were there lots of repeated brainstorm suggestions?
- What is the most difficult part of this brainstorm?
- Did you like brainstorming?
- Do you have any ideas on how we could improve our brainstorming process?

Class Story & Class Big Book

Objectives

To develop cooperative and organizational skills

To build group inclusion

To use communication and listening skills

To develop oral language skills and use language in meaningful ways

To structure creativity

To reconstruct information already introduced

To assess what the students have learned (including self-assessment)

Materials

For each student or student pairs

- 11" x 14" drawing paper
- pencils, crayons, markers

For the class

- brads, ribbons, or book binding tape
- cards or paper for teacher to record each student pair contribution

Directions

CLASS STORY

Have students pair up and take turns adding to a story that is either started by the teacher, another student, or a continuation of a story read to the class.

Moving around the room, the pairs of students can add to the story, based on what the previous students have said, in the form of a narrative, a rhyme, or a drama.

The teacher acts as the recorder and writes down on a card or separate piece of paper what each of the student pairs adds to the story. At the completion of the story, give each card to the students who added that idea so they can use it as the basis of an illustration that will be incorporated into a Class Big Book (see below). Have the students copy the teacher's writing onto their illustration.

The Class Story can be on-going and evolving as students add to the story multiple times over several days as they acquire a greater content base. This activity can be used for self-assessment as students discover they (and the class as a whole) have more in-depth content to add to the story.

CLASS BIG BOOKS

If you have done a Class Story (above), use that story as the pages of your Big Book. If you have not done a class story, use the following directions.

Decide as a class the subject matter and title of your class Big Book.

Brainstorm what content should be included and, as the students make suggestions, write them in words or pictures on the board. Cluster suggestions into groups that seem to go together. These groups can become the various chapters in the book. Assign each student or allow them to choose one of the brainstormed ideas to illustrate and write a sentence about (or have the teacher write down their sentences).

A contest can be held to determine which illustration should be used for the cover or which student gets to design and draw it. There should be a Title page, an About the Authors page, and Chapter Headings pages. Depending on the subject matter of the book, the class might also do a table of contents, an index, and a glossary. Hole punch all the drawings and other elements of the book and put them together with brads, ribbons, or book binding tape.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- How did you feel when it was your turn to add to the story?
- How did you show your classmates that you were listening to what they said?
- Did it seem like the whole class was cooperating and listening to each other?
- What helped you to remember what your classmates said?
- Did you like making a Class Story?
- What do you think of the finished Class Big Book?

ILLUSTRATED STORY CHART

Objectives

- To develop cooperative and organizational skills
- To build group inclusion
- To use communication and listening skills
- To develop oral language skills
- To reconstruct information already introduced
- To assess what the students have learned

Materials

- For each small group
- butcher or chart paper
 - marking pens or crayons

Directions

Choose a story, essay, article, video, or film to present to the class. Have students work in small groups of 4–6 students. Draw a story chart outline on the board or chart paper. Have each group copy it onto a large sheet of chart or butcher paper. Draw enough squares on the story chart to accommodate the categories you would like to use. For example, for a piece of literature, the categories might be setting, characters, and plot across the top with beginning, middle, and end down the side.

The students' task is to reconstruct the story in pictures according to those categories. A variation is to have one group work on the beginning of the story, one on the middle, and another on the end.

	SETTING	CHARACTERS	PLOT
BEGINNING			
MIDDLE			
END			

Group members must work together and agree on how they want to illustrate the blocks so that they communicate what they feel is the important information. In order to assess each individual's contribution, have each student contribute to at least three squares, and have them add their initials to

the squares they worked on. Each group then tells the story to the class using their story chart as a guide.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- How did you feel when it was your turn to add to the chart?
- How did you feel when you presented your group's story chart to the class?
- What did you do when another group was presenting their story chart?
- Did it seem like your group was cooperating in this activity?
- Did this activity helped you to remember what happened in the story?
- What did your group do that helped you to remember the story?
- What did your group do that helped you to finish quickly?

INTERACTIVE SLIDE SHOWS

Objectives

To determine what is already known about a topic

To build inclusion

To preview and increase comfort with the material before adding new content

To use communication and listening skills

To develop oral language skills and use language in meaningful ways

To structure creativity

Materials

- any chosen slide show
- slide projector and screen
- paper and crayons or markers (for each student pair)

Directions

Have students imagine they are at the place where the slides were taken. Have them watch the slides as you go through them rather quickly with little or no narrative. Give students the opportunity to discuss what they see with a buddy as if they were really on a field trip. At the end of the slides, have them talk to their buddy about everything they can remember that they saw on their “field trip.” Were there any slides they could not identify? What questions do they have? Have them draw a picture of their field trip. Lead a class discussion, and list on the board in words or pictures what they saw.

Show the slides again and this time present any new information that didn’t surface in the class discussion, but that you would like the students to learn. Alternatively, assign a couple of slides to a pair of students and have them write a script or describe what is happening in the slide. The teacher can add a small bit of new information or “correct” misconceptions when the students have finished describing their slide.

The slides can be shown a third time at the end of the activity as an assessment of what the students have learned. Have the students again describe the slide, or some particular aspect of it such as how the animal is adapted to live in its habitat, in writing or verbally.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- Was it hard to remember everything you saw on your field trip?
- Did it help to have your buddy there to talk to about what you saw?
- Did other buddy pairs remember or see things differently than you did?

Mini-Drama

Objectives

- To increase cooperative skills
- To increase communication and listening skills
- To build group inclusion
- To reconstruct information already introduced

Materials

- For each small group
- butcher or chart paper
 - construction paper
 - glue
 - scissors
- optional
- copies of passages from the story you read

Directions

Gather the class into a listening circle and read them a story. Have the students help you decide which scenes should be acted out. Decide on about seven to eight scenes and divide the class into small groups of about four students. As a class, review each of the scenes briefly and assign each scene to a group to help them remember the important points. The pertinent passages can be copied for each group if there are readers in the group, aides, or older students to help with the reading.

Give the students time and materials to make simple costumes, posters, or backdrops, and then time to practice their mini-drama. Have each group dramatize their scene in sequence for the rest of the class. Each scene should only be a few moment's long. Be sure to remind the class to applaud each group's performance and then display their props sequentially on the walls.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- How did you feel when you presented your group's drama to the class?
- What did you do when another group was presenting their drama?
- Did it seem like the whole class was cooperating in this activity?
- Do you think this activity helped you to remember what happened in the story?
- What did your group do that helped you to remember the story?

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- What did your group do that helped you to finish quickly?
 - What was the most difficult part of this activity?
 - What part of this activity did you like the most?

MY BUDDY SAYS

Objectives

To use language in meaningful ways

To determine what is already known about a topic

To encourage language risk-taking in a non-threatening environment

To increase active listening skills

To allow students to hear language on a specific topic

Materials

- prepared questions
optional for each student
- relevant pictures

Directions

Review with students what it means to really listen to a classmate, and how active listening looks. Form student buddy pairs and assign each student to be either #1 or #2. Ask a question, and give Buddy #1 around 30 to 60 seconds to discuss their answer with Buddy #2. Ask Buddy #2 what Buddy #1 said about the question. Buddy #1 gets to correct only misstatements by the reporting buddy, but not add new information. List the answers in words or pictures on the board. Switch roles and pose a question for Buddy #2 to answer. Repeat the process so that each buddy gets to answer at least two questions. Remind the students that only one person at a time is talking while their buddy is actively listening. You can provide each student with a picture that is somewhat relevant to the questions—this may help prompt responses.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- When you were speaking, how did you know your buddy was listening?
- Did you learn anything new?
- Which questions were the easiest to answer?
- Which questions seemed harder to answer?
- How much of what your buddy said did you remember?
- What could help you to remember more of what your buddy said?

PARTNER PARADE

Objectives

To use language in meaningful ways

To determine what is already known about a topic

To encourage language risk-taking in a non-threatening environment

Materials

- prepared questions
optional for each student
- relevant pictures

Directions

For this activity to work, remind students everyone needs to cooperate, follow directions, and talk quietly with each of their partners.

Place two strips of masking tape on the floor about an arms length apart, and make each strip long enough to accommodate half the class. Have the students form two lines on the strips so that each person is facing a partner on the opposite strip. ***As students become more familiar with this activity, you can forego using the tape.***

Pose a question for students to discuss with their partner. When you call time, check for understanding by calling for volunteers to report what they discussed with their partners. The “parade” occurs after each question. One of the lines moves down one person and the person at the end moves to the front of the line. Everyone now has a new partner.

Have each student greet their new partner before the new question is asked. You can provide each student with a picture that is relevant to the questions—this may help prompt responses. After you have posed several questions, you now have the opportunity to break students up into heterogeneous groups of two, four, or six based on where they are in line.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- Did it seem like the whole class was cooperating?
- Did you remember to listen well to each of your partners?
- Did you learn something new?
- Which questions were the easiest to answer?
- Which questions seemed harder to answer?
- Did you like this activity?

SPLASH WORK

QUILT STORY

Objectives

To develop cooperative and organizational skills

To build group inclusion

To develop oral language skills and use language in meaningful ways

To structure creativity

To help students synthesize new information

Materials

For each student

- “quilt square” of heavy art paper

For the class

- two colors of book binding tape
- various colors of construction paper
- glue

Directions

Have each student contribute a quilt square to a paper class quilt representing something you have been studying. This can be used as an assessment of what students learned and also help the student to synthesize and organize the experience for themselves.

Distribute a blank, paper quilt square of heavy art paper to each student and make various colors of construction paper and glue available for the class.

Have students tear the construction paper in pieces to design their pictures and then glue the pieces in place. A one-inch border should be left around each quilt square. Once all the squares are completed, have each student work with a partner to learn about their partners picture. They should learn why the partner chose to create that picture and then describe the reason to the class. Once all the quilt squares have been described, have the class designate some master quilters to help the teacher piece all the quilt squares together using book binding tape to form the lattice strips and the border.

Reflections

At the end of the activity, ask the students to think about some of the following questions and then lead a class discussion.

- What was the most difficult part of this activity?
- Did you remember to listen well when your partner was talking with you?
- What helped you to remember what your partner said?

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- Do you think the rest of the class was cooperating and listening to you when you described your partner's quilt?
 - How did it make you feel when your partner described your quilt? When you described your partner's quilt?
 - Would it have been easier to describe your own?
 - How were the quilt squares different, and similar, to one another?
 - What do you think we should do with this quilt now that it is finished?