



# Decision Making

## ABOUT CENTER FOR THE COLLABORATIVE CLASSROOM

The Caring School Community (CSC) program is a nationally recognized, research-based program for grades K–6 that builds classroom and schoolwide community while developing students' social and emotional (SEL) skills and competencies.

# Tangram Designs

By: The Caring School Community

# Tangram Designs

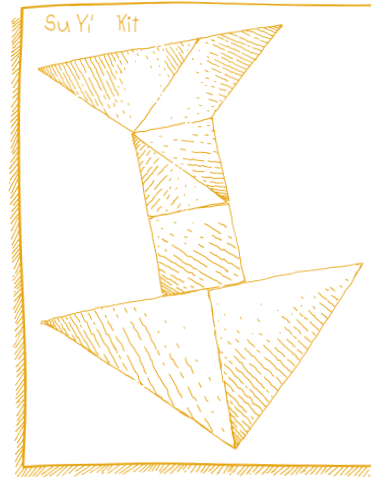
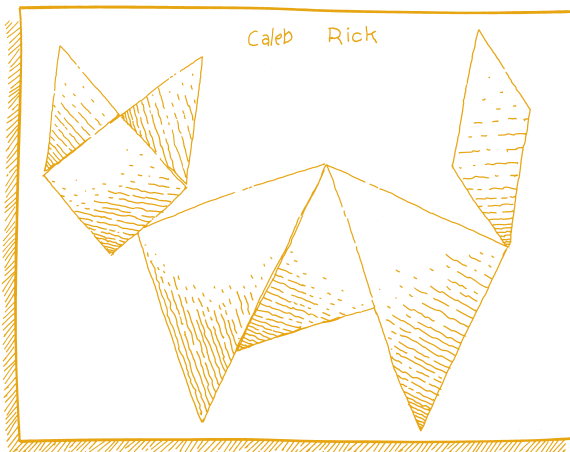
## ACTIVITY SUMMARY

Buddy partners create designs using the traditional seven pieces of a tangram. Using one of their designs, they make a tangram picture. In preparation, the students learn about the tangram and explore shapes and patterns by arranging the pieces.

**CONTENT AREAS:** MATH, THE ARTS

**ACADEMIC AND SOCIAL FOCUSES:**

- Identifying shapes
- Using shapes to create patterns
- Exploring spatial relationships
- Sharing the work
- Reaching agreement



## MATERIALS

### BUDDY STUDENT PREPARATION

- Two transparencies of Tangram Puzzle sheet (see BLM on p. 241) for each class
- Overhead projector

### BUDDIES ACTIVITY

- Transparency of Tangram Puzzle sheet
- Overhead projector
- Tangram Puzzle sheets for each buddy pair
- Sheets of white or other light-colored construction paper, scissors, and glue for each buddy pair

## BUDDY TEACHER PREPARATION

There are many explanations and examples of tangram puzzles, pictures, and designs in commercial products and books (see Ideas for Tangram Designs on p. 148).

- Make two transparencies of the Tangram Puzzle. Cut out the tangram pieces on one transparency for modeling making designs.
- Make photocopies of the Tangram Puzzle on paper in a variety of colors. Buddy partners will choose from among the colored paper to make their designs.

# BUDDY STUDENT PREPARATION

## Older Buddies

### INTRODUCE THE TANGRAM ACTIVITY

- On an overhead projector, show the Tangram Puzzle transparency. Explain that a tangram is an ancient Chinese puzzle in which a square is divided into seven shapes. The shapes can be put together to make hundreds of designs. Ask:

**Q** What shapes do you see in the tangram?

- As the students identify the shapes, point them out on the transparency: five triangles, one square, and one parallelogram.
- Explain that buddy partners will get a Tangram Puzzle sheet like this. They'll decide together who cuts out the seven tangram shapes. Then they'll make designs with the shapes, decide which design they like best, and glue that design onto a sheet of paper to make a picture.

### MODEL MAKING TANGRAM DESIGNS

- Explain that traditional tangram puzzles require that you use all seven shapes, that the pieces touch, and that no pieces overlap. On the overhead projector, use the transparency tangram pieces you made to model making a few designs. Have a few volunteers make designs with the transparency pieces.

### DISCUSS SHARING THE WORK AND REACHING AGREEMENT

- Explain that during the session they will need to *share the work* and *reach agreement* with their younger buddy. Discuss:

**Q** How can you share the work of making designs with your buddy?

**Q** How will you reach agreement about what design to use in your picture?

## Younger Buddies

### INTRODUCE THE TANGRAM ACTIVITY

- On an overhead projector, show the Tangram Puzzle transparency. Explain that a tangram is an ancient Chinese puzzle in which a square is divided into seven shapes. The shapes can be put together to make hundreds of designs. Ask:

**Q** What shapes do you see in the tangram?

- As the students identify the shapes, point them out on the transparency: five triangles, one square, and one parallelogram.
- Explain that buddy partners will get a Tangram Puzzle sheet like this. They'll decide together who cuts out the seven tangram shapes. Then they'll make designs with the shapes, decide which design they like best, and glue that design onto a sheet of paper to make a picture.

### MODEL MAKING TANGRAM DESIGNS

- Explain that traditional tangram puzzles require that you use all seven shapes, that the pieces touch, and that no pieces overlap. On the overhead projector, use the transparency tangram pieces you made to model making a few designs. Have a few volunteers make designs with the transparency pieces.

### DISCUSS REACHING AGREEMENT

- Explain that during the session they will need to *reach agreement* with their older buddy. Discuss:

**Q** How will you reach agreement about what design to use in your picture?

**Q** If you and your buddy disagree, what can you do to try to reach agreement?

## BUDDIES ACTIVITY

### GET READY TO WORK TOGETHER

- Have buddy partners find a comfortable place to work.
- On the overhead projector, show the tangram transparency. Explain that:
  - **Each pair will get a copy of the Tangram Puzzle in a color they choose.**
  - **Partners will decide who cuts out the seven tangram shapes.**
  - **Together partners will use the shapes to make designs.**
  - **Partners will agree on a design to use in their tangram picture.**
  - **Partners will glue the design to a piece of construction paper to make a picture.**
  - **Partners will write their names on their picture.**

**TIP** You may want to write the steps of the activity on the board.

### DESIGN TANGRAMS

- Have pairs select the color Tangram Puzzle they want. Distribute the construction paper, scissors, and glue. Have them begin their project.

### CIRCULATE AS BUDDIES WORK

- If necessary, support buddy partners as they work by asking:
  - Q What other designs can you make with the tangram shapes?
  - Q What can you do if you don't agree on a design for your picture?
  - Q How can you share the work of [gluing the pieces to the construction paper]?
- If partners finish early, have them make another picture.

### SHARE POSTERS AND REFLECT AS A GROUP

- Gather all buddies. Have a few volunteers share their pictures with the group.
- Briefly discuss:
  - Q What are some ways you helped your buddy today? What are some ways your buddy helped you?
- Collect the pictures for display.

# REFLECTING ON THE BUDDIES ACTIVITY

---

### Older Buddies

#### DISCUSS THE BUDDIES ACTIVITY

- Back in their classroom, have the students reflect on how they worked with their younger buddy:

**Q** How did the activity go today? Do you think it was successful? Why?

**Q** If you and your buddy didn't agree about a design for your picture, how did you reach agreement? How did this work for you?

### Younger Buddies

#### DISCUSS THE BUDDIES ACTIVITY

- Back in their classroom, have the students reflect on how they worked with their older buddy:

**Q** If you and your buddy didn't agree about a design for your picture, how did you reach agreement? How did this work for you?

## NOTES

---

### Ideas for Tangram Designs

*The Tangram Book*, by Jerry Slocum

*Tangram Puzzles: 500 Tricky Shapes to Confound and Astound*, by Chris Crawford

*Tangrams ABC Kit*, by Susan Johnston

### Extensions

- Reading the books *Grandfather Tang's Story*, by Ann Tompert, and *The Warlord's Puzzle*, by Virginia Walton Pilegard, is an excellent way to introduce the students to tangrams. If you want your students to have more practice making designs, have pairs or small groups use plastic, cardboard, or paper tangram pieces to form designs or pictures. After the students practice forming their own designs, ask them to try to arrange the pieces back into the original square.

# Tangram Puzzle

---

Cut out the tangram pieces along the lines.

