

Symbol Sandbox

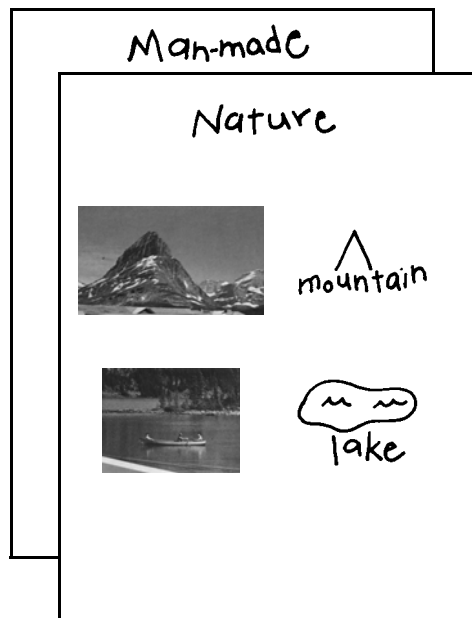


Nature or Not

Science

Ask students to name some things they might see when riding down the highway. Discuss the idea that some things are part of nature (hills, rivers, trees) and some things are man-made (bridges, buildings, different kinds of roads). Explain that some things may fit in either category (lakes, tunnels, berms).

Give each student (or pair of students) two pieces of paper and instruct students to label the sheets "man-made" and "nature." Have students cut out magazine pictures of natural features and man-made structures and glue them down the left sides of their papers. On the right sides, have students draw symbols (such as those used in map keys) for each of the magazine pictures.



Conclude by letting students use the symbols they have created to make maps of imaginary highways and the surrounding areas.

Mini Maps

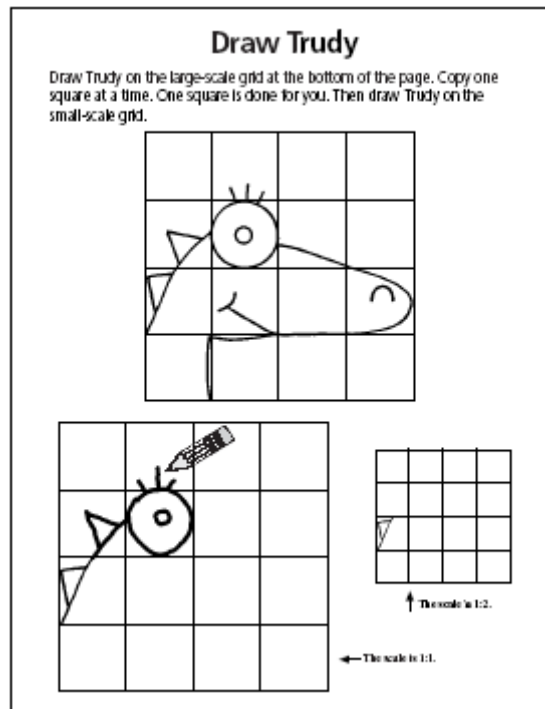
Art

Show some maps and point out that a map is like a drawing made from high above the area. Students cannot hover over your town or school to make a map, but they can easily look down on a small area such as an open desk drawer, a shelf of books, an aquarium, a bin of supplies, or a desk top. Provide pencils and paper and let each student select and map a small area in the classroom by drawing it from above. Suggest that students title their maps, color them, and display them near the locations that were mapped.

Reducing Trudy

Mathematics

Make copies of page 67 for your class. (Alternatively, make a single copy for an overhead projector and complete this activity together, enlisting the help of student volunteers.) Have the students copy the character at the top of the page (Trudy) onto the large grid at the bottom of the page, one square at a time.



Next have the students draw Trudy on the smaller grid. Ask students to notice that this drawing looks the same except for its smaller size or "scale." Similarly, maps are small-scale drawings of large areas.

To further explain the concept of scale to older students, tell students that their larger drawings have a scale of 1:1; that is, one inch on their drawings represents one inch on the original. Let students measure to prove this is true. Then have students measure their smaller drawings to see that one inch on the smaller drawing represents two inches on the original for a scale of 1:2. Explain that a mapmaker might use a scale of 1:40,000,000 in order to make a map of North America fit on a piece of paper. Let interested students experiment with other sizes of grids to draw Trudy to a variety of scales. (Students can draw their own grids, or you can use a copier to enlarge or reduce the grids on page 67.)

Road Codes

Make copies of page 68 and have students decode the message.

Language Arts

Message in Code

Use these symbols to decode the message at the bottom of the page.

⚓ - [A]	+++ - [B]	🌲 - [D]	■ - [E]	🚢 - [F]
○ - [H]	🏠 - [L]	⊕ - [M]	← - [O]	◀ - [P]
🏢 - [R]	+ - [S]	+ - [T]	△ - [Y]	

+ ○ ■ + ■

T H E S E

+ △ ⊕ +++ ← 🏠 +

S Y M B O L S

⚓ 🏢 ■ ⚓ 🏠 🏠

A R E A L L














🚢 🏢 ← ⊕ 🏢 ← ⚓ 🌲

F R O M R O A D

⊕ ⚓ ◀ + 🚢

M A P S

All the symbols used in the code came from road maps. Of course, on maps the symbols did not represent letters. Let students guess what the symbols did represent:

- | | |
|--|---|
|  — harbor
 — railroad
 — park
 — historical marker
 — travel information
 — city
 — forest ranger station |  — capital
 — fish hatchery
 — hunting and fishing area
 — university
 — airport
 — hospital
 — campground |
|--|---|

Point out the key or legend on a map. Explain that the key shows symbols used and what they represent on that map. Ask volunteers to search the map to find the symbols shown in the key. Together, use the symbols on this and other maps to make a "secret code" for the class. Students can use the code to write messages to each other, or you can use the code to write messages to the class (good work in math, happy vacation, etc.).

Picture Your Neighborhood

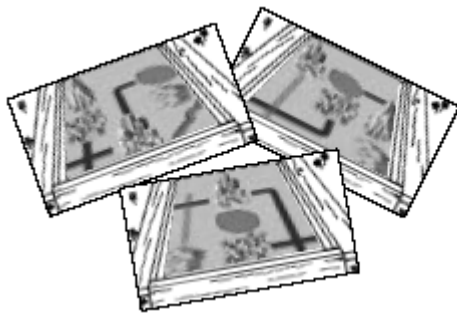
Art

In preparation for this activity, ask students to look closely at their homes and the surrounding area. What kinds of houses are next door? Do they have garages? Are there trees in the yard? Where and how many? Provide old magazines and let students make collage-like representations of their neighborhoods by combining pictures cut from magazines with their own drawings.

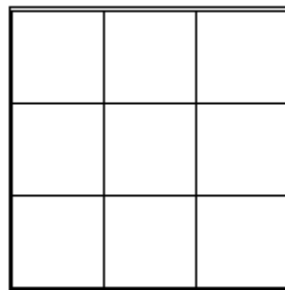


Mapmaker Game

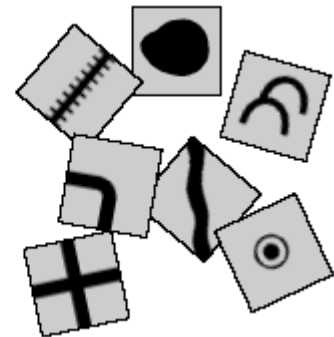
Problem Solving



sandbox scenes



playing board

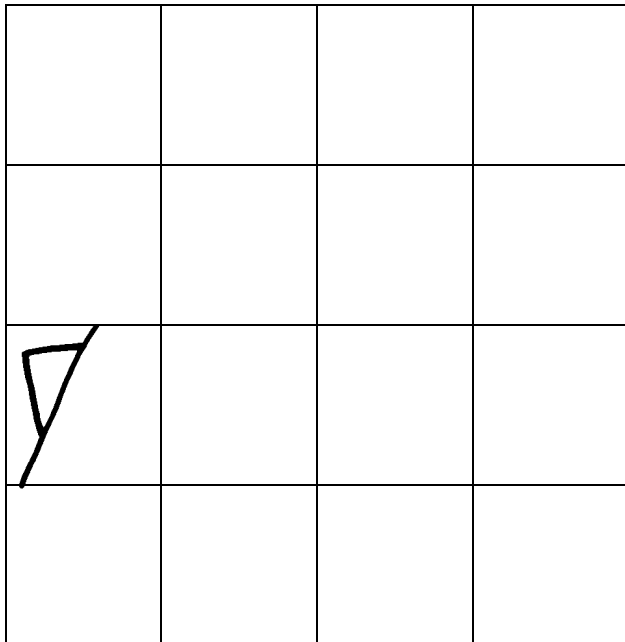
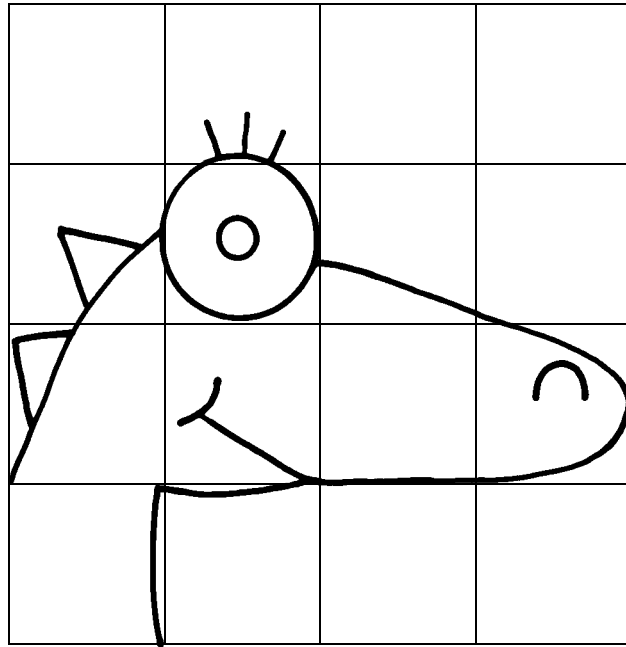


map pieces

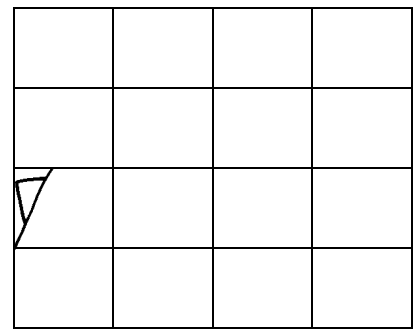
To play, each player selects a playing board (page 69) and one of the sandbox scenes (page 69). The map pieces (page 70) are shuffled and placed in a stack, upside down. Players take turns drawing map pieces and using them to make maps of their sandbox scenes on their playing boards. If a player draws an unneeded map piece, it is placed on a discard pile. (If players run out of map pieces, the discard pile can be shuffled and reused.) The winner is the first player to complete a map.

Draw Trudy

Draw Trudy on the large-scale grid at the bottom of the page. Copy one square at a time. One square is done for you. Then draw Trudy on the small-scale grid.



← The scale is 1:1.






















↑ The scale is 1:2.








Use with "Reducing Trudy" (page 64).







Message in Code









Use these symbols to decode the message at the bottom of the page.





 = <input type="text" value="A"/>	 = <input type="text" value="B"/>	 = <input type="text" value="D"/>	 = <input type="text" value="E"/>	 = <input type="text" value="F"/>
 = <input type="text" value="H"/>	 = <input type="text" value="L"/>	 = <input type="text" value="M"/>	 = <input type="text" value="O"/>	 = <input type="text" value="P"/>
 = <input type="text" value="R"/>	 = <input type="text" value="S"/>	 = <input type="text" value="T"/>	 = <input type="text" value="Y"/>	

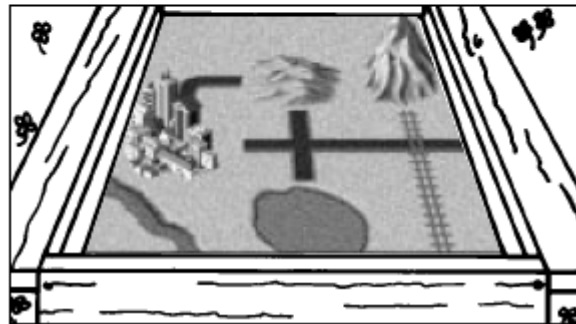
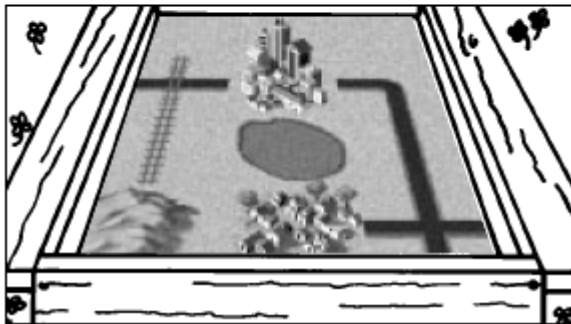
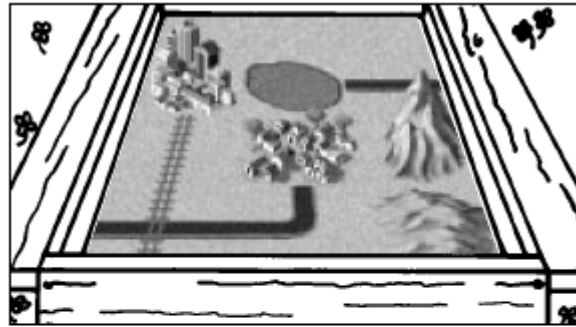
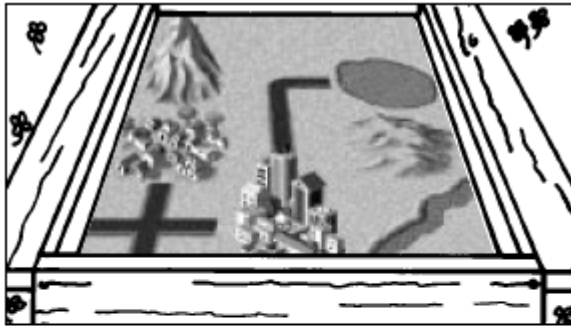
     

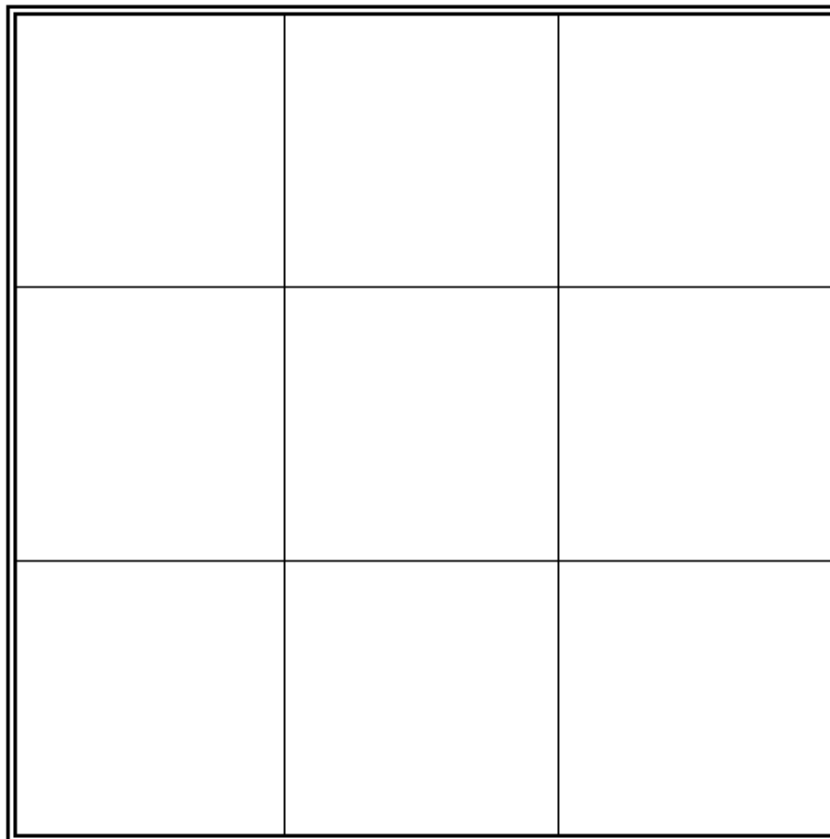
   

Use with "Road Codes" (page 65).

Sandbox Scenes

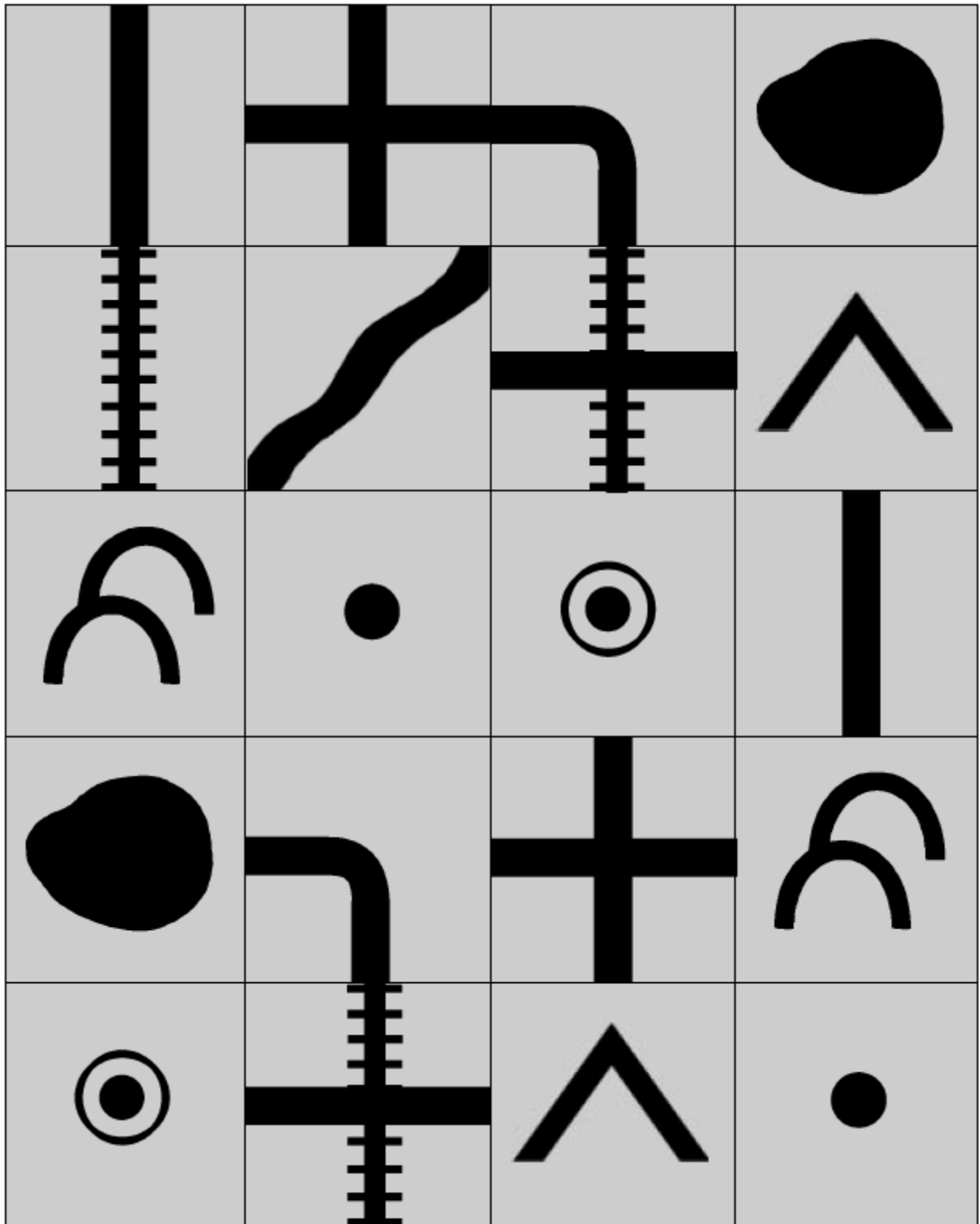


Playing Board



Use with "Mapmaker Game" (page 66).

Map Pieces



Use with "Mapmaker Game" (page 66).