BIG SQUARE PUZZLE
(aka "Tarsia" Puzzle)

Big Square Puzzles are located in the Reproducible sections for some *MathLinks* Student Packets and also in some Packet Resource sections (Essential Skills and Nonroutine Problems). Three examples are given in this file to help students get used to the routine (two non-mathematical). A template follows for making up puzzles of your own.

Why: Big Square Puzzles engage students as they practice skills. Students can talk about strategies and solutions in a safe environment while solving the puzzle.

Prepare ahead:
- Reproduce a Big Square Puzzle – cut up one puzzle per pair or small group.
- Or ask students who arrive early to class or finish work early to cut up puzzle pieces and paperclip them together so they will be ready for use. The intact Reproducible page acts as an answer key.

Launch the activity: Use the Big Square Puzzles to establish routines and practice skills from prior grades. To solve a puzzle, ask students to divide up all pieces among their groups. Of the given examples, the first matches pairs of famous cartoon characters from the same movie/show/comic. For the next two, states and their capitals are matched. For the final two, students look for equivalent numerical expressions to match. In many puzzles, students will find that there may be more than one match, but there is only one way to complete each of these puzzles. While students are solving the puzzle, circulate and give each group a glue stick or a strip of tape to use to tape pieces together upon completion.

Note that a few packets have these puzzles in triangle form (Big Triangle Puzzles), but the activities work the same.

Accountability/Follow-up Ideas:
- Ask students to show a completed puzzle as an "exit slip."
- Ask them to tape a completed puzzle together. Use puzzles as room displays.
- Give extra credit to groups that complete a puzzle correctly.
- Ask students to create their own puzzles for others to assemble using a paper template or online software. One possibility is: https://download.cnet.com/Formulator-Tarsia/3000-2051_4-10584458.html

BIG SQUARE PUZZLE: STATES AND CAPITALS 1

	Column 1	Column 2	Column 3	Column 4
Row 1	right: California; bottom: Olympia	top-left: Sacramento; right: Florida; bottom: Wyoming	top: Tallahassee; right: Illinois; bottom: Denver	top: Springfield; bottom: Kansas
Row 2	top: Washington; right: Delaware; bottom: Pierre	top: Cheyenne; left: Dover; right: Maine; bottom: Alaska	top: Colorado; left: Augusta; right: Georgia; bottom: Des Moines	top: Topeka; left: Atlanta; bottom: Missouri
Row 3	top: South Dakota; right: Trenton; bottom: Salem	top: Juneau; left: New Jersey; right: Helena; bottom: Connecticut	top: Iowa; left: Montana; right: Jackson; bottom: Honolulu	top: Jefferson City; left: Mississippi; bottom: Michigan
Row 4	top: Oregon; right: Columbus	top: Hartford; left: Ohio; right: Santa Fe	top: Hawaii; left: New Mexico; right: Lincoln	top: Lansing; left: Nebraska

BIG SQUARE PUZZLE: STATES AND CAPITALS 2

Oklahoma (top) · Oregon (left) · Alabama (right) · Austin (bottom)	**Los Angeles** (top) · Montgomery (left) · Arizona (right) · Utah (bottom)	**Oklahoma City** (top) · Phoenix (left) · Idaho (right) · Baton Rouge (bottom)	**Providence** (top) · Boise (left) · Louisville (right) · Indiana (bottom)
Texas (top) · Portland (left) · New Hampshire (right) · Raleigh (bottom)	**Salt Lake City** (top) · Concord (left) · North Dakota (right) · Virginia (bottom)	**Louisiana** (top) · Bismarck (left) · South Carolina (right) · Little Rock (bottom)	**Indianapolis** (top) · Columbia (left) · Rhode Island (right) · Kentucky (bottom)
North Carolina (top) · New Orleans (left) · Harrisburg / Pennsylvania (right) · Albany (bottom)	**Richmond** (top) · Pennsylvania (left) · Montpelier (right) · West Virginia (bottom)	**Arkansas** (top) · Vermont (left) · Nashville (right) · Madison (bottom)	**Frankfort** (top) · Tennessee (left) · Las Vegas (right) · Massachusetts (bottom)
New York (top) · New York City (left) · Sacramento (right) · Minneapolis (bottom)	**Charleston** (top) · California (left) · Carson City (right) · Annapolis (bottom)	**Wisconsin** (top) · Nevada (left) · St. Paul (right) · Maryland (bottom)	**Boston** (top) · Minnesota (left) · Birmingham (right) · Baltimore (bottom)

0.125 · $\frac{1}{8}$ · 0.900	$\frac{8}{9}$ · 0.75 · 0.5	0.50 · 0.875	$\frac{1}{2}$ · $\frac{3}{25}$ · 0.12
$\frac{9}{10}$ · 0.75 · $\frac{5}{8}$	$\frac{12}{24}$ · $\frac{3}{4}$ · 0.2	$\frac{10}{9}$ · 0.6 · $\frac{1}{2}$	$\frac{7}{8}$ · $\frac{4}{5}$ · 0.8 · 0.06
0.625 · 0.20 · 0.75	$\frac{1}{5}$ · $\frac{1}{5}$ · $\frac{150}{1000}$	0.5 · 0.8 · $\frac{4}{5}$	$\frac{6}{100}$ · 0.14 · $\frac{7}{50}$ · $\frac{4}{5}$ · 1
$\frac{3}{4}$ · 0.4	0.15 · $\frac{2}{5}$ · 0.375	0.8 · $\frac{3}{8}$	$\frac{4}{4}$ · 0.10 · $\frac{1}{10}$

BIG SQUARE PUZZLE: _____