#### **BIG SQUARE PUZZLE**

(aka "Tarsia" Puzzle)

Big Square Puzzles are located in the Reproducible sections for some *MathLinks* Student Packets and also in some Other Resource sections for specific Units (Essential Skills and Nonroutine Problems). Four examples are given in this file to help students get used to the routine (three 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).
- Paperclip pieces together so they will be ready for use.
- Have glue sticks or tape ready for students upon completion. The intact Reproducible page acts as an answer key.

Launch the activity: Use the Big Square Puzzles as a starting activity to establish routines.

- 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 example, students look for equivalent numerical expressions to match. In some 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 units have these puzzles in triangle form (Big Triangle Puzzles), but the activity works the same.

#### Accountability/Follow-up Ideas:

- Ask students to show a completed puzzle as an "exit slip."
- Ask students 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: <a href="https://download.cnet.com/Formulator-Tarsia/3000-2051">https://download.cnet.com/Formulator-Tarsia/3000-2051</a> 4-10584458.html

MathLinks: Core (2<sup>nd</sup> ed.) ©CMAT

## **BIG SQUARE PUZZLE: CARTOON CHARACTERS**

Butt – Head	Fred Flinstone	Barney Rubble	Larry the Cucumber	Bugs Bunny	Daffy Duck	Wile E. Coyote	Homer.	Bart	Mickey Mouse
Beavis			Bob the Tomato			Roadrunner			Donald Duck
	Rocky	Bullwinkle		Winnie the Pooh	Tigger		Raphael	Leonardo	
Candy Cat			Tommy Pickles			Ferb			Charlie Brown
Peppa Pig			Chuck Finster			Phineas			Ydoon2
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	Shaggy	Scooby Doo		Jerry Mouse	Tom Cat		Kenny	Cartman	
Tweety	Shaggy	Scooby Doo	Yogi Bear	Jerry Mou	Fom Cat	Olive Oyl	Kenny	Cartman	Batman
Тweety	Shaggy	Scooby Doo	Yogi Bear	Jerry Mou	Гот Cat	Olive Oyl	Kenny	Cartman	Ratman

## **BIG SQUARE PUZZLE: STATES AND CAPITALS 1**

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Olympia			Wyoming			Denver			Kansas
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	Delaware	Dover		Maine	Augusta		Georgia	Atlanta	
Pierre			Alaska			Des Moines			Missouri
South Dakota			nreant			ьwоI			Jefferson City
	Trenton	New Jersey		Helena	Mo		son	Mississippi	
	Ë	ersey		He	Montana		Jackson	ssippi	
Salem	Ť	ersey	Connecticut	He	ıtana	Honolulu	Jack	ssippi	Michigan
nogərO Salem	Tr	ersey	broffrsH Counscrient	He]	ntana	Honolulu Honolulu	Jack	ssippi	Michigan

## **BIG SQUARE PUZZLE: STATES AND CAPITALS 2**

	Oklahoma			Los Angeles			Oklahoma City			Providence	
Oregon		Alabama	Montgomery		Arizona	Phoenix		Idaho	Boise		Louisville
	Austin			Utah			Baton Rouge			Indiana	
	Техаѕ			Salt Lake City			Louisiana			zilo qanaibnI	
Portland		New Hampshire	Concord		North Dakota	Bismarck		South Carolina	Columbia		RhodeIsland
	Raleigh			Virginia			Little Rock			Kentucky	
	Morth Carolina			Richmond			Arkansas			Frankfort	
N ew Orleans		Harrisburg	Pensylvania		Montpelier	Vermont		Nashville	Tennessee		Las Vegas
	Albany			West Virginia			Madison			Massachusetts	
	New York			Chadeston			Wisconsin			Boston	
New York City		Sacramento	California		CarsonCity	N evada		St. Paul	Minnesota		Binningram
	Minneapolis			Annapolis			Maryland			Baltimore	

# **BIG SQUARE PUZZLE: NUMERICAL EXPRESSIONS**

5 6 − 2 + 3	$1000 - 6$ $1^{100}$	17 °E (4)(3)(2)(1)	<sup>24</sup> 3 10(2)
L  4+3(7)	95 I 64 4	7(4 + 4) 6-3+9-4(3)	50 -114 + -124 30
$\frac{3+3}{3-1}$	9I $\frac{01}{1}$ $\frac{3}{1}$ $\frac{1}{1}$ $\frac{8}{(4)(2)}$	0 0 (6)(8)(10) 9(150 – 143)	z S + S z + 4 2 + 4 + 6 + 8 + 10 100
$\frac{1}{3} + \frac{1}{3}$	$\frac{\mathcal{E}\mathcal{E}}{\mathcal{E}}$	(6)L 8 3(7+4)	$z^{(\varsigma + \varsigma)}$ $12 - 2(2)$

BIG SQUARE PUZZLE: