

# Asian Odyssey

A National K-12 Interdisciplinary Curriculum Model

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## SAN—THE MATH GAME OF THREE

### Introduction

Students will enjoy a math game that challenges their ability to distinguish attributes such as shape and color as well as Chinese and Japanese art and cultural icons.

### Grade Level

This lesson was created for a 3<sup>rd</sup>-grade classroom; it can be adapted for grades 4-6.

### Objectives

- Students will be able to describe and distinguish attributes such as shape, color, architecture, and textiles.
- Students will compare and contrast Asian and North American art and cultures.

### Concepts

- Attribute: an inherent characteristic or quality; an object closely associated with or belonging to a specific person or thing
- *San*: the Japanese and Chinese word for three; in the game below, *San* means a group of three card that have the same attributes, such as content, shape, or color.

### Key Ideas

- Art is a reflection of culture.
- Attributes can be extremely important when comparing and contrasting art and cultures.

### Materials

#### *Chinese*

*Horse*, late 7<sup>th</sup>-8<sup>th</sup> century, 1955.295

*Conversation in a Thatched Hut*, late 13<sup>th</sup> century, 1975.21

*Prince's Coat and Pants (with lining)*, 8<sup>th</sup> century, CMA 1996.2

#### *Japanese*

*Tiger Family*, early 1800s, CMA 1983.3.1-.2

*Noh Robe*, first half 18<sup>th</sup> century, CMA 1974.36

*Eight Views of Famous Places: Evening Bell in Kamakura: The Mountains in Awa Province from the Hachiman Shrine in Tsurugaoka*, early 1830s, CMA 1985.357

#### *North American*

*White Mare*, Winslow Homer, c.1868, CMA 1958.33

*Looking Along Broadway Towards Grace Church*, Red Grooms, 1981, CMA 1991.27  
*Scalp Shirt*, Native American Indian (Lakota Sioux), c1890, CMA, 1984.1046

Handout (Rules of Set)

Sets of 27 Orange cards, 27 Blue cards, 27 Green cards

### **Procedure**

1. Ask students if they have ever played a math game called “Set.” If students are unfamiliar with the game, print out and distribute the Handout at the end of this lesson or have them go to <http://www.setgame.com/> and read about it. Tell them that they will be playing a similar game involving art and cultural items from China, Japan, and North America.
2. Ask students if they know what an attribute is. Provide examples: the attributes of a triangle are three sides and three angles; the attributes of a stop sign are eight sides and the color red. Ask students to name other examples.
3. Print out the sets of Orange, Blue, and Green cards (27 cards each). Read the following directions:
  - The Game: “*San*” is a math game based on identifying and distinguishing attributes.
  - Goal: To identify three cards, a *San*, having the exact same or completely different attributes. The winner is the person with the most cards at the end of the game.
  - Materials: Deck of cards featuring three attributes, such as shape, color, and cultural category (animals, architecture, and clothing)
  - To begin play, lay 12 cards face-up. Ask players if anyone can find a *San*. Possible *Sans* include 3 green rectangles featuring animals. Another possible *San* could be orange crosses with clothing. *Sans* can also involve completely different attributes such as 3 cards (one blue rectangle with an animal, one orange oval with architecture, and one green cross with clothing).
  - The first player to correctly identify and describe a *San* claims the three cards. The dealer replaces the cards. If players are unable to find a *San*, the dealer lays down three additional cards. Continue until cards are all displayed and players cannot identify any more *Sans*.
4. Model the game, playing against the class or a small group of volunteers.
5. Review the rules, then give individual decks to groups of 3-5 students and have them play the game.
6. Share experiences.

### **Evaluation**

Student play and strategy during modeling.

Observation of students during group play

### **Enrichment**

- A. In order to claim a *San*, students would have to identify a fourth attribute distinguishing artwork from China, Japan, and North America.

- B. Students could also research artwork at [www.clemusart.com](http://www.clemusart.com) that feature cultural representations of Japan, China, and North America. They could sketch the art and design a new set of *San* cards.

### **State of Ohio Standards**

#### **Math**

1. Describe, classify, compare and model two- and three-dimensional objects using their attributes.
2. Analyze and describe properties of two-dimensional shapes and three-dimensional objects.

#### ***Social Studies***

1. Compare the cultural practices and products of the local community with those of other communities in Ohio, the United States and countries of the world.

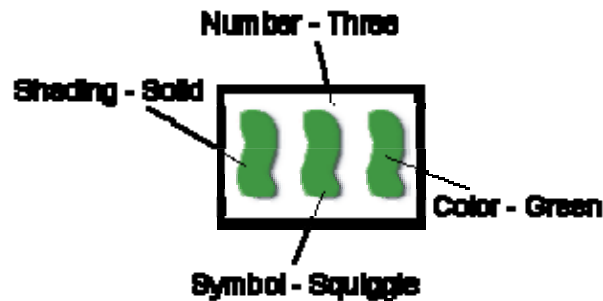
#### ***Art***

1. Identify and compare similar themes, subject matter and images in artworks from historical and contemporary eras.
2. Connect various art forms and artistic styles to their cultural traditions.
3. Demonstrate skill and expression in the use of art techniques and processes.
4. Use details to describe the characteristics of subject matter in artworks (e.g., subtle facial expressions, distinctive clothing or stormy weather).

**This lesson plan was developed by Jim Sweeney, 3<sup>rd</sup> grade teacher, Shaker Heights City Schools, Shaker Heights, Ohio**

## How to Play Set® Rules and Overview

### *Features of the Cards*



### *Rules*

The object of the game is to identify a 'Set' of three cards from 12 cards laid out on the table. Each card has a variation of the following four features:

- (A) **Color:**  
Each card is *red, green, or purple*.
- (B) **Symbol:**  
Each card contains *ovals, squiggles, or diamonds*.
- (C) **Number:**  
Each card has *one, two, or three* symbols.
- (D) **Shading:** Each card is *solid, open, or striped*.

A 'Set' consists of three cards in which each feature is EITHER the same on each card OR is different on each card. That is to say, any feature in the 'Set' of three cards is either common to all three cards or is different on each card.

For example, the following are 'Sets':



*All three cards are red; all are ovals; all have two symbols; and all have different shadings.*



All have different **colors**; all have different **symbols**; all have different **numbers of symbols**; and all have the same **shading**.



All have different **colors**; all have different **symbols**; all have different **numbers of symbols**, and all have different **shadings**.

The following are not 'Sets':



All have different **colors**; all are **diamonds**; all have **one symbol**; however, two are **open** and one is **not**.



All are **squiggles**; all have different **shadings**; all have **two symbols**; however, two are **red** and one is **not**.

### ***The Magic Rule***

**If two are... and one is not, then it is not a 'Set'.**

### ***Quick Start***

For a quick introduction for anyone playing the card version, and especially for children under six, start with the small deck (*just the solid symbols*). This eliminates one feature, color. Play as indicated below but only lay out nine cards. When you can quickly see a 'Set' with this 27 card mini version, shuffle the two decks together. You can try the quick start in this link. Here we eliminate the feature of shading, and test your skill in finding 4 'Sets' from a layout of 9.

### ***The Play***

The dealer shuffles the cards and lays twelve cards (*in a rectangle*) face up on the table so that they can be seen by all players. The players remove a 'Set' of three cards as they are seen. Each 'Set' is checked by the other players. If correct, the 'Set' is kept

by the player and the dealer replaces the three cards with three from the deck. Players do not take turns but pick up 'Sets' as soon as they see them. A player must call 'Set' before picking up the cards. After a player has called 'Set', no other player can pick up cards until the first player is finished. If a player calls 'Set' and does not have one, the player loses one point. The three cards are returned to the table. If all players agree that there is no 'Set' in the twelve cards showing, three more cards (*making a total of fifteen*) are laid face up. These cards are not replaced when the next 'Set' is picked up, reducing the number to twelve again. If solitaire is being played, the player loses at this point. The play continues until the deck is depleted. At the end of the play there may be six or nine cards which do not form a 'Set'.

The number of 'Sets' held by each player are then counted, one point is given for each and added to their score. The deal then passes to the person on the dealer's left and the play resumes with the deck being reshuffled.

When all players have dealt, the game ends; the highest score wins.