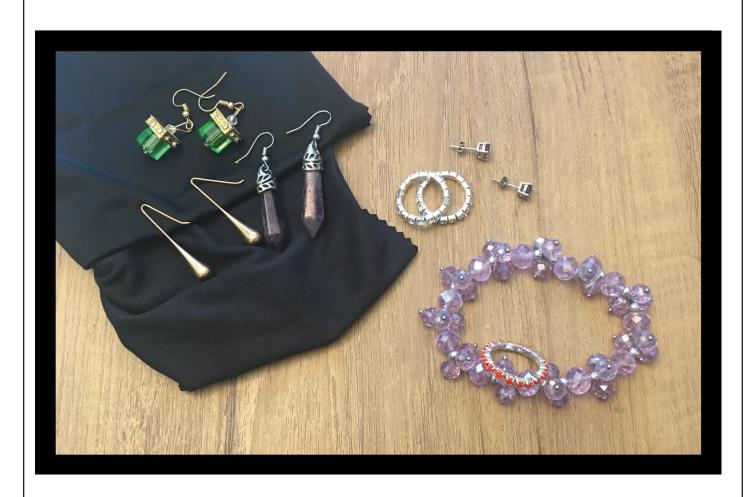
Help Your Students

Learn Number Bonds that Make Twelve





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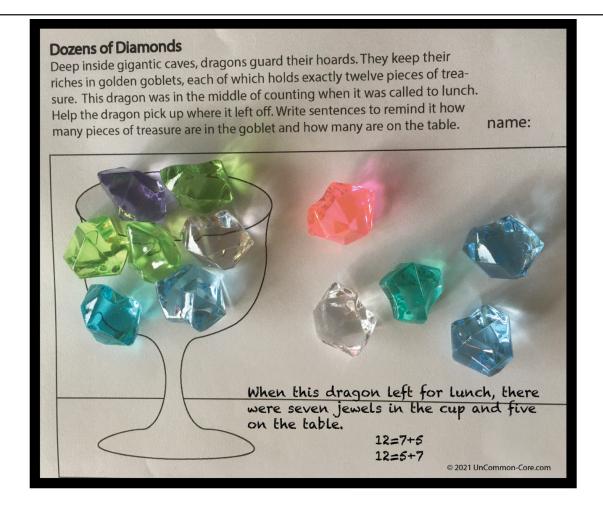


**Dragons' Dozens** sets the stage for decomposing the number twelve. Your students will benefit from cataloging every pair of numbers that adds up to twelve. They will be able to apply the skills gained and the reasoning used in the process of playing this game to solve new problems.

**D**ragons are well known for hoarding treasure. Normally, they store their diamonds in groups of twelve. They hide their treasures in containers such as golden goblets, silver boxes, or alabaster urns. Dragons spend most of their time guarding their treasure hoard. Often, in the middle of polishing their gems, they hear a noise from deep within their cave that requires investigation.

When they return, they must know immediately if any of the dozen treasures have been stolen. One quick glance at 5 diamonds in a goblet and 7 more on the table is all a dragon needs to know that the twelve treasures they were polishing are safe.

Young dragons are taught to check the number of gems when they return to work. They learn to see if the number of gems on the table and inside the gold goblet add up to twelve. Hatchlings practice diligently in order to protect their future hoards.



#### Academic standards and learning goals:

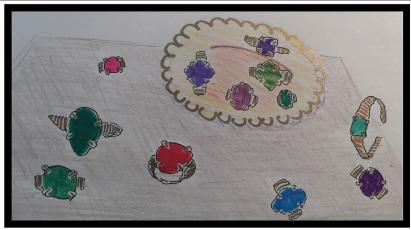
Variations of **Dragon's Dozens** can easily encompass math concepts such as multiplication/division, fractions, proportional thinking and geometry. Prepare learning goals according to your school or district conventions. Post learning goals where everyone can see them and refer to them during lessons.

**Materials:** You already have everything needed to play **Dragon's Dozens** in your classroom: pencils, paper, things to count, crayons, and imagination.

**Dragon's Dozens** can also be played using golden goblets, acrylic diamonds (not safe for young children or some special needs students), jewel stickers, scales (bucket balance not dragon), and treasure such as antique keys, <u>priceless rings</u>, or anything that is shiny or makes a satisfying clink when tossed together. You may crave an entire set of dragon's claws but really, each dragon only needs one for counting.

Prepare copies of the handouts along with materials such as scissors, glitter glue, and paste.

In place of actual gem stones, gold coins, or diamonds, consider using stickers, or metallic tape cut to look like expensive gemstones. If your students have played <u>Pieces of Eight</u> or <u>Ten Gems</u>, you might include a few pirate coins and royal crowns in the Dragon's hoard for fun. 3



Play!

Gather your dragonlings in small groups to introduce the game and make sure everyone knows how to play. Later, you could use **Dragon's Dozens** in a learning station or as fun math practice when students have completed other assignments.

Explain why they have been selected for the special honor of counting your hoard.

**"W**hen you are a dragon as old as I am, you will understand the importance of keeping your treasures polished and counted." Glance around to ensure your privacy. Lean in. Speak softer.

"Today you young dragonlings will begin special training which will allow you to instantly recognize a treasure of twelve - in other words - a Dragon's Dozen.

"As you know, we Dragons have excellent eye sight, fantastic hearing, and a unique ability to remember number bonds to twelve.

"This is because Dragon treasures are stored in twelves. In the secret cave where I keep my hoard, each container holds one dozen priceless items."

Quietly, and reluctantly (Dragons are naturally reluctant to show their hoard to others) show the clutch your twelve most prized treasures and the gold (silver, alabaster . . .) container in which you keep them.

"**M**any times, when I sit in my cave, polishing my hoard, I hear - a scratching, or a bumping, or some shadow of a noise that I must investigate. Dragons must keep the location of their hoards secret and safe.

"Oh, the stories I could tell of knights searching for my hoard! Damsels who come to rescue them, and all the trouble they cause. But not today. Today we are here for one reason only -

"You, dear Hatchlings, must learn to recognize one dozen in an instant. Even when part of the twelve are in the container and part are on the table! You must know immediately if any have been taken!



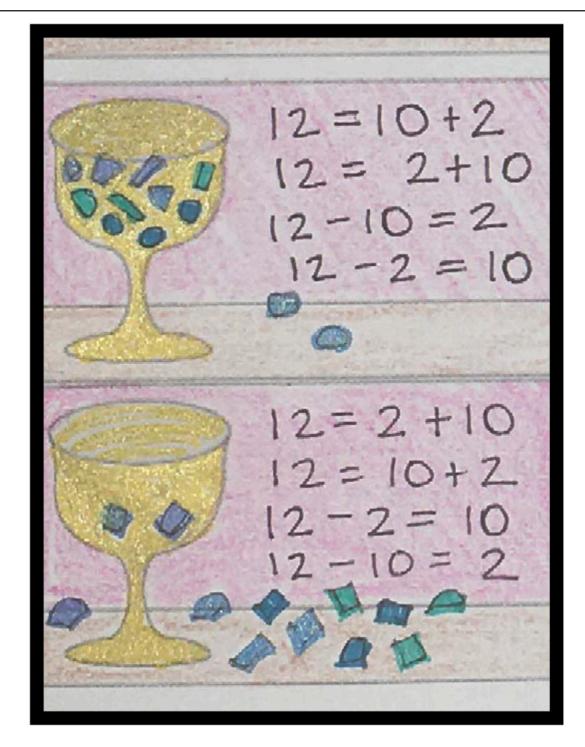
#### Dozens of Alternatives and Extensions

Students love to read and write about dragons. Academic connections to the **Dragon's Dozens** game could include learning about maps, dinosaurs, or reptiles. Fill your class library with fables, fairy tales, and legends about dragons (close cousins of bookwyrms). Let some of these stories be written and illustrated by the young authors in your class.

Jewels come in all sizes and shapes. Students can make their own treasure hoard and learn about geometry. Gems can be folded from origami paper. Another way to create your own treasure trove is to snip geometric shapes out of metallic or iridescent tape and stick them to construction paper.

Adapt **Dragons' Dozens** to give students practice with multiplication facts with 12 as the product. Let your students explore fractions with 12 in the denominator. Have them think about probabilities when tossing twelve sided dodecahedral dice.

Dragons are always polishing and weighing out their treasure troves. This might be a good time to talk about weights and measures, leverage the connections between science and math, and provide context for learning how to weigh things accurately. Accuracy is important to dragons.

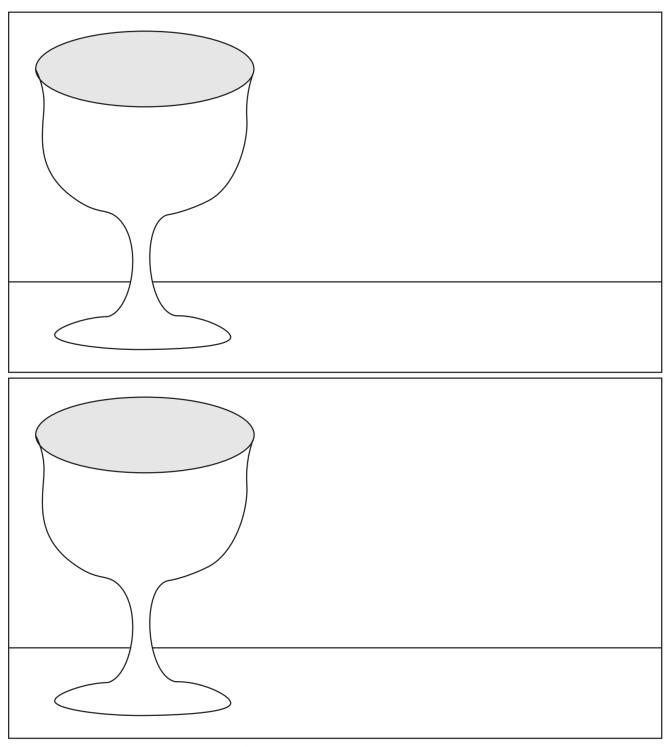


Authentic contexts where students can apply new ideas as well as practice math skills help children stay focused & engaged. They set the stage for children to work. They encourage students to make connections between math and other areas of the curriculum.

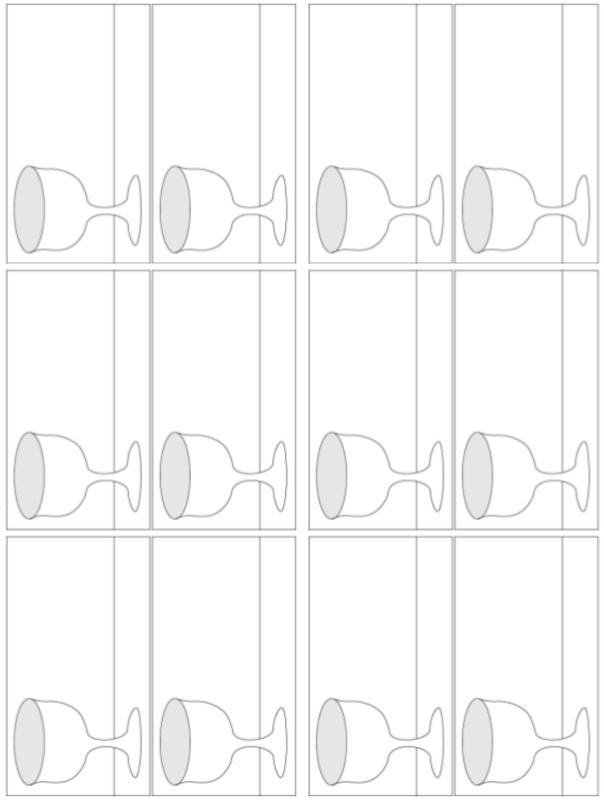
Authentic doesn't have to mean 'real life.' Children are always ready to play pretend. A pirate's need to count pieces of eight is just as authentic for children as making change when shopping. <a href="Princess">Princess</a>, <a href="Princess">Pirate</a>, <a href="Dragon">Dragon</a>, <a href="Princess">Prince</a> is a series of engaging math activities that seem like child's play and yet deliver authentic, and fictional, contexts for learning math.

#### **Dozens of Diamonds**

Deep inside gigantic caves, dragons guard their hoards. They keep their riches in golden goblets, each of which holds exactly twelve pieces of treasure. This dragon was in the middle of counting when it was called to lunch. Help the dragon pick up where it left off. Write sentences to remind it how many pieces of treasure are in the goblet and how many are on the table.

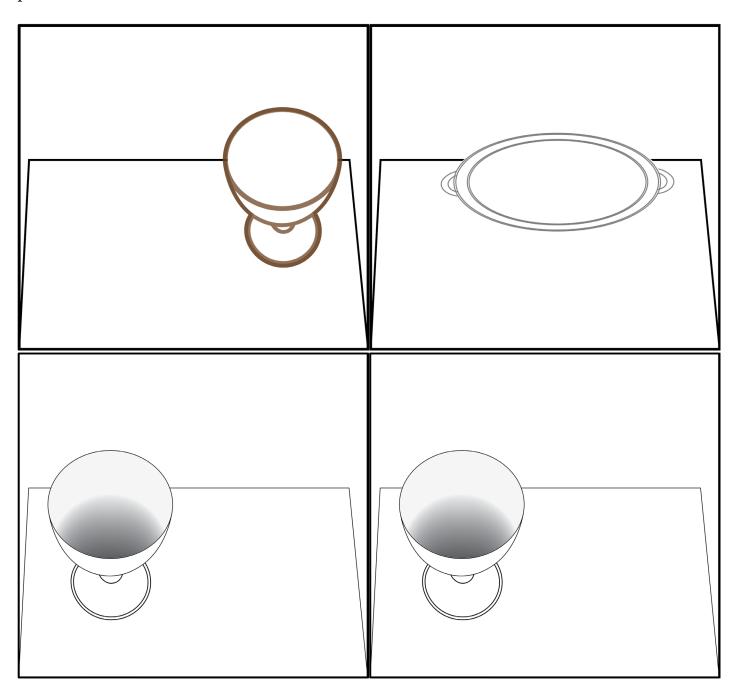


**Dozens of Diamonds Math Fact Cards** Show which of the dragon's 12 gems are in the golden goblet and which are on the table. Cut out the cards. Write the number sentence and your initials on the back.

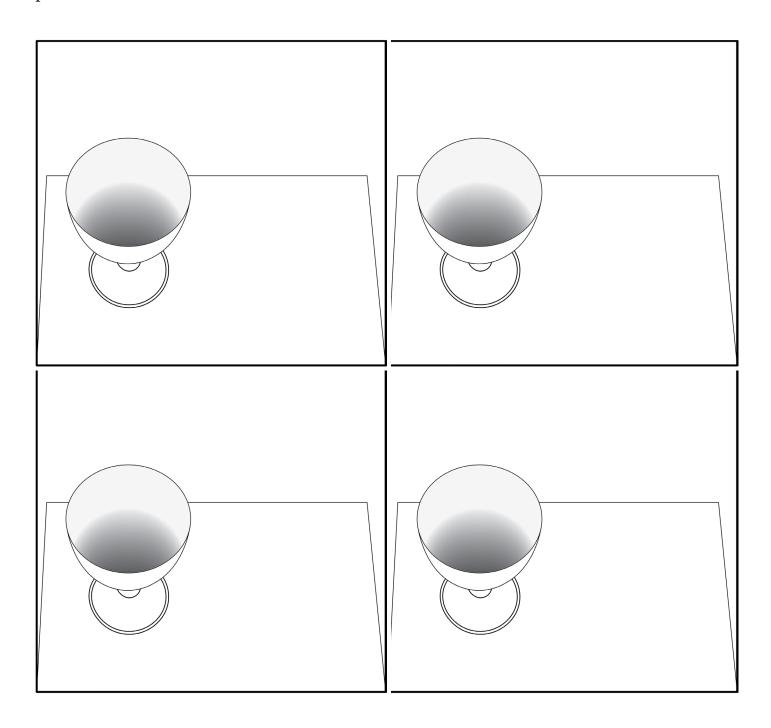


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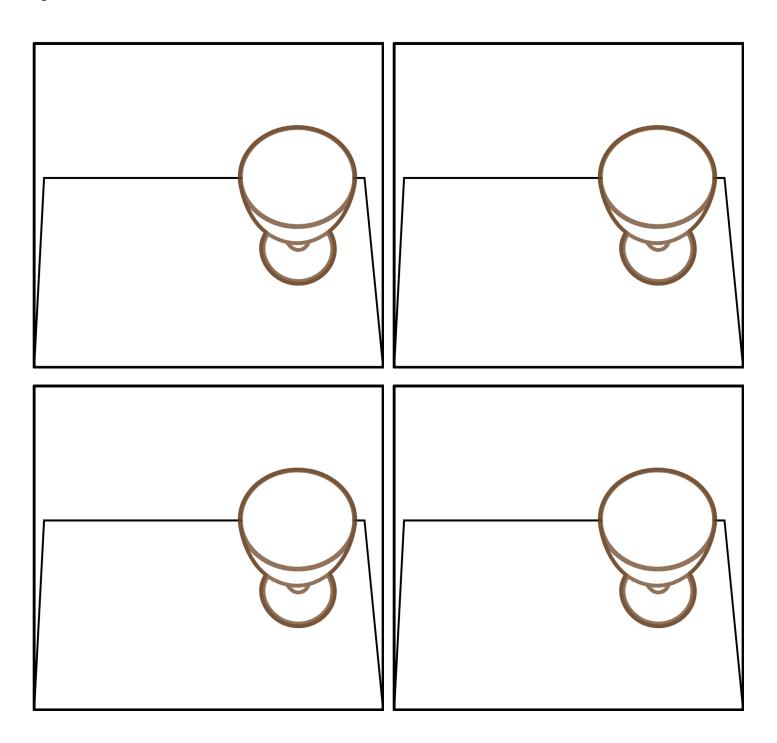
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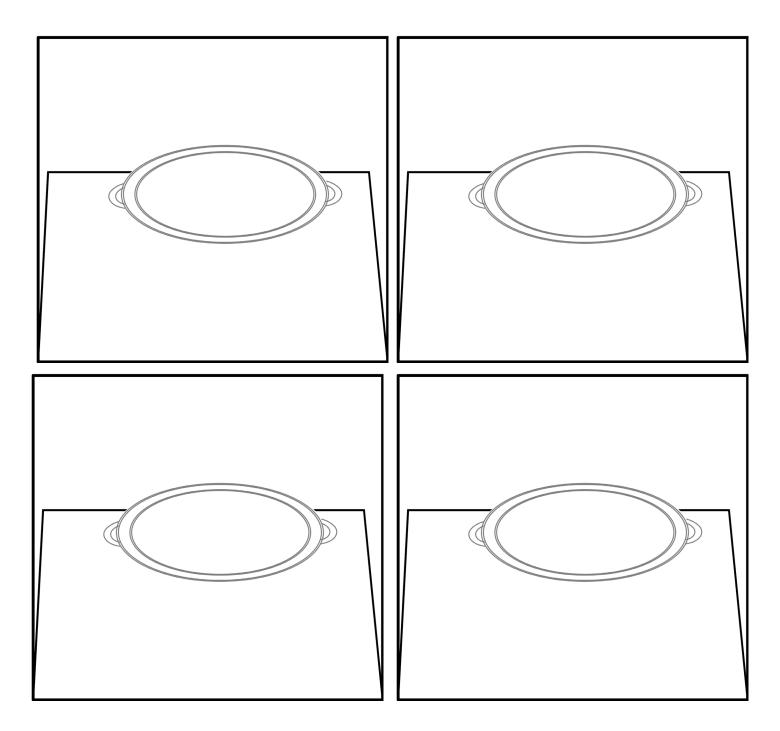
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