Task #1: What do you think might be in this box? What do you hope is in there? Why? Use a chart paper or sticky notes to write down your predictions.

Task #2: Discussion

What do you have zero of? Use your imagination to think of a list of at least 10 things that you have zero of. For example, how many hippopotamuses do you have? We bet the answer is zero! Try to make your list as creative as possible and try to include some things you're glad you have zero of. For example, how many broken bones do you have? We hope it's zero! Share your list with a friend.

Next, open the box with the combination given in the envelope for Task #2. Together, read the book and track new learning as a class or in small groups.

Book: *What Do You Know about Bugs?* [*https://www.amazon.com/gp/product/1477746633/ref=oh\_aui\_detailpage\_o08\_s00?ie=UTF8&psc=1*](https://www.amazon.com/gp/product/1477746633/ref=oh_aui_detailpage_o08_s00?ie=UTF8&psc=1)

Task #3:

First, write about your thoughts on the following questions:

* Do you use the word zero very often? Most people use a variety of words to express the concept of zero. Can you think of at least five such words? Feel free to borrow words from foreign languages if you know them! Have fun thinking about the variety of ways we express the concept of nothing!

Then, visit the wonder at <http://wonderopolis.org/wonder/who-invented-the-zero> :

* Explore the wonder, read about it.
* Check out the vocabulary.
* In small groups, choose one of the articles; read them together and hunt for interesting facts to share with the whole group.
* Share and record what you’ve found interesting, new, confusing, and/or challenging.

Last, take the quiz to test your new knowledge!

Task #4: Play Candy Rush!

Give your feedback to the Wonder Maker

Name: Grade: Teacher:

1. What did you love about the Wonder Box? Why?
2. What do you wish you could add to the Wonder Box? Why?
3. Overall, how would you rate the Wonder Box?
   1. One star = bad; Four stars = excellent ✩ ✩ ✩ ✩

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# [Who Invented Numbers?](http://www.whoinventedit.net/who-invented-numbers.html)

Numbers or symbols used for counting have existed since man learned to count. Archeologists and historians estimate that numbers were first used around 32,000 years ago. They base this theory on archeological findings such as bones and rocks with marks on them. These may have been counting or tally signs used to keep track of time or quantities of objects, such as food or livestock.

**Simple Systems**

The very first number system must have been a tallying system. Tallying systems have no complex symbols or place values. It is the simplest counting system though not practical for dealing with large quantities of number. Our modern number system has 10 as its base or place value. A place value simplifies number representation and counting.

Another simple number system was the ordinal counting system. It is thought to have started when man began counting with his fingers, each finger standing for a unique number.

**Place Value Systems**

A couple of ancient civilizations invented number systems with place values. The oldest was the Mayan system with 60 at its base, around 3400 BC. The Egyptians invented a 10 base system in 3100 BC. The modern place [value system](http://www.whoinventedit.net/who-invented-numbers.html#) also has 10 as its compression figure. It came from India by way of the Arabs.

**Invention of Number Zero**

The number zero was used by various peoples including the Mayans, Egyptians, Babylonians and Indians. The Egyptians used zero in their accounting records. The Indians referred to zero as “the emptiness.” The inquisitive Greeks were puzzled by this figure and developed many interesting philosophical views on the subject. In fact, occultists and mystics used the number zero to symbolize the nothingness, or void state of things.

**Invention of Negative Numbers**

The Chinese invented numbers in their negative. This is recorded in “The New Chapters on the Art of Mathematics” circa 100 BC. The [Greek mathematicians](http://www.whoinventedit.net/who-invented-numbers.html#) didn’t see the possibility until around the 3rd century AD. By 600 AD, the Indian money lenders were using negatives when computing debts.

Invention of Fraction Numbers

The invention of fractions can be traced to the ancient Egyptians. Their Kahun Papyrus discusses fractions and other mathematical problems. It dates from around 1800 BC. Among the Greeks, the best known mathematical work on the topic is Euclid’s “Elements.”

**Invention of Irrational Numbers**

The Indians knew about fraction numbers, as recorded in their Stananga Sutra. Another text, the Sulba Sutra, expounds on irrational numbers. It dates from 800 to 500 BC. A Greek follower of Pythagoras, Hippasus, is said to have discovered irrationals at the same time. But Pythagoras refused to accept the existence of non-rational numbers and had Hippasus put to death.

**Invention of Modern Numbers**

The Indians also invented the modern number system. It is often called [Arabic](http://www.whoinventedit.net/who-invented-numbers.html#) numerals because it came to Europe through the Arabs. The [Persians](http://www.whoinventedit.net/who-invented-numbers.html#) copied the Indian number system and then passed it on to the Arabs. Then an Italian mathematician named Fibonacci traveled to Algeria to study. When he came back home, he brought the Indian numerals with him. He wrote about the system in his book “Liber Abaci.” This system soon gained wide acceptance throughout Europe. Today it is the number system used in practically the whole world.

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# **Who Invented Zero?**

The concept Zero played a major role in seeing the growth of higher [mathematics](http://www.everydayguide.com/who-invented-zero/#) which is a major step in the history of mankind. Zero is also a synonym of the word none. Although there are many stories that surround the invention of the number zero, studies show that the number was invented by a group of people from the Mayan civilization. At that time, the decimal system was in use just as it is today only that a space was left to indicate a zero up until the third century BC. The other version of the story is that, it was invented by the Indian mathematician and astronomer, Aryabhata, around 9th century C.E. There is also a claim that tracks the invention of zero back to 300 B.C in [Babylon](http://www.everydayguide.com/who-invented-zero/#). All these inventions were independently made, and were not connected.

he empty space was very confusing because it was also used for the separation for numbers. That brought about the dot to stand in place of a zero. The first time the zero symbol was evidently used can be traced to the seventh century AD. The Maya made the number zero invention specifically for the[calendars](http://www.everydayguide.com/who-invented-zero/#) used during the third century AD. Evidence of number zero was not realized in the Europe civilization up until after eight hundred AD from the Arabs who were coming to [trade](http://www.everydayguide.com/who-invented-zero/#). The Romans and Greeks used the [abacus](http://www.everydayguide.com/who-invented-zero/#) to carry out their calculations and did not therefore need the number zero. The zero name was derived from the Arabic [language](http://www.everydayguide.com/who-invented-zero/#).