

Deep Space Math

Activity 3 - Alien Communication

There has been a recent discovery in the search for life on other planets! A race of furry purple creatures named Bensonites have been discovered on Neptune. Scientists from the International Space Agency have discovered that the Bensonites are able to communicate, but only through mathematical formulas. In order for us to understand the alien language, the team from the Space Agency needs your help to solve the puzzle!



Like humans, the Bensonites use the same number system, their 'equals' sign is the same (=), and they group numbers in the same manner.

The International Space Agency received the following message from the Bensonites. See if you can decode the formulas by figuring out what the symbols mean.

Message 1:

$$(5 \text{ flower } 7) \text{ star } 2 = 6$$

$$(100 \text{ star } 4 \text{ heart } 15) \text{ smiley } 2 = 100$$

$$5 \text{ sun } (19 \text{ heart } 12) \text{ sun } 3 = 105$$

Message 2: What is the formula equal to?

$$5 \text{ smiley } 3 \text{ star } (3 \text{ sun } 5 \text{ heart } 10) \text{ heart } 10 \text{ smiley } 2 \text{ sun } (2 \text{ flower } 3) \text{ star } (2 \text{ smiley } 2 \text{ sun } 5) = ?$$






Can you believe THIS is math?

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Activity 3 - Alien Communication - *continued*

Solution:

Message 1:

-  = Addition
-  = Division
-  = Multiplication
-  = Subtraction
-  = To the Power of

Message 2:

Using the symbols above, the bonus message means:

$$\begin{aligned}
 &5^3 / (3 * 5 - 10) - 10^2 * (2 + 3) / (2^2 * 5) \\
 &= 125 / 5 - 100 * 5 / 20 \\
 &= 25 - 25 \\
 &= 0
 \end{aligned}$$

Can you believe THIS is math?