

Equality Activities to Try at Home

Activity 1

- Place some toys in front of your child. Ask them how many there are. Rearrange the items without adding or removing any. Ask them how many there are.
- Why? This helps them see that just because you've moved the toys around, the quantity doesn't change.
- Split the toys up into two piles that are close together. Did the quantity change if I'm looking at all of the toys in front of me? No. 7 toys broken up into a pile of 2 and a pile of 5 is still 7 toys.
- Trade out one of your toys for different toy. Did the quantity change? No. If I started with 7 and trade one of those toys for a different toy, I still have 7 toys.
- Repeat with other objects.
- NOTE: Students need to see that moving objects around (without adding or removing anything) doesn't change the quantity of the items. 4 items shuffled around will still be 4 items.

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Activity 2

- Give your child some toys. Give yourself the same number of toys. Ask if the groups are equal.
- Rearrange the toys on your side. Ask if the groups are equal.
- Repeat for their toys.
- Split your pile up into two small piles. (Ex. you both have 7 toys. You split your toys up into a pile of 3 and a pile of 4).
- Indicate both your piles. Tell them that you have a pile of 3 and a pile of 4. Do you have the same number of toys as they do?
- Ask them "Is a pile of 3 and a pile of 4 the same as a pile of 7?"
- Combine your piles back into one big pile. Have them split their pile into 2 piles and ask the question again.
- Both of you break your big pile into two piles and compare.
- Repeat with other objects.
- Repeat with other objects but make your pile slightly different than your child's. Examples:
 - You have cheerios. Your child has fruit loops.
 - You have apples. Your child has oranges.
 - You have chocolate bars. Your child has grapes.
- NOTE: A major misconception that children have is that the answer comes after the equals sign. (Example: $4 + 3 = 7$) Develop their understanding of equality by switching it so that the "answer" is before the equals sign (Example: $7 = 4 + 3$),

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Activity 3: Moving to Abstract

- Write out one of the problems you just did. For example, a pile of 3 toys and a pile of 4 toys is the same as a pile of 7 toys.
- Complain that this is a lot of writing.
- Write down the number 3 below "a pile of 3 toys" and ask if this makes sense.
- Ask them if they know a mathematical way of writing "and". (Note: Depending on the age/experience level of your child, you may have to just show them that "and" can be written as "+" in this case).
- Write the "+" sign below "and".
- Ask what you could write instead of "a pile of 4 toys". Write 4 below it.
- Explain that we use "=" to show "is the same as" and write this below "is the same as".
- Ask what you could write instead of "a pile of 7 toys". Write the 7.
- Reread the equation you should write. " $3 + 4 = 7$ " as "a pile of 3 toys and a pile of 4 toys is the same as a pile of 7 toys".
- Recombine your two piles into one big pile.
- Have your child split their pile into two piles. (ex. $2 + 5$)
- Say the long way "one pile of seven toys is the same as one pile of two toys and one pile of five toys."
- Write out the equation. $7 = 2 + 5$
 - Note: make sure to put it in this format. Children who see the equation written both of these ways will have a deeper understanding of equality.
- Repeat this activity but this time both of you split your piles. For example $1 + 6 = 4 + 3$
- NOTE: A major misconception that children have is that the answer comes after the equals sign. This activity will help students understand that the equals sign means that whatever is on the left side must be the same as whatever is on the right side.

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Activity 4

- Start with two equal piles again.
- Explain that you are going to split yours up into two piles. You're not allowed to add any or take any away.
- Ask your child to close their eyes.
- While their eyes are closed, split your pile into two and cover one pile.
- When they open their eyes, ask them to tell you how many you covered.
 - Example: $3 + ??? = 7$
- Have them do the same for you.
 - Example: $7 = ??? + 1$
- Repeat but this time split both sets of piles but cover only one pile.
 - Example: $1 + 6 = ??? + 2$
- NOTE: A major misconception that children have is that the answer comes after the equals sign. So when they see $1 + 6 = \underline{\quad} + 2$, they will usually say that $\underline{\quad}$ is 7. Then $+ 2$. Therefore the answer is 9. This activity will help students understand that the equals sign means that whatever is on the left side must be the same as whatever is on the right side.

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Activity 5

- - Create two equal pile of toys.
 - Add a few more toys to your pile. (Example: 2 toys)
 - Ask your child "What would you have to do to make your pile the same as my pile?" They should say "Add 2 toys). Have them do this so your piles are even again.
 - Your child now adds some toys to their pile. Example: 3 You say "Now I have to add 3 toys to my pile so that my pile is the same as your pile. Do it.
 - This time, remove some toys from your pile. Have them make the piles even.
 - Show what this looks like mathematically.
 - - Example: You both started with seven toys so write $7 = 7$
 - You add 2 toys and they add 2 toys: $7 + 2 = 7 + 2$
 - You are now starting with $9 = 9$
 - They add 3 toys to both sides so $9 + 3 = 9 + 3$
 - You are now starting with $12 = 12$
 - You remove 4 toys. $12 - 4 = 12 - 4$
 - NOTE: This will help students develop a sense of "Preservation of equality". Whatever you do to one side must be done to the other side in order to keep both sides equal.