DragonBox Algebra 5+ Home School Guide

An Introduction to DragonBox Algebra 5+:

DragonBox makes it possible for elementary school age kids to learn basic equation solving skills in a natural, fun and effective way. This guide will tell you about the game and how it works, as well as how the game can be used as part of your home school curriculum.

We believe that children should be actively engaged in their learning process because they are, by nature, curious and inquisitive. From birth, they learn about their ´world´ by asking questions and by experimenting, using trial and error. DragonBox was conceived and developed to draw on these abilities.

We want children to rely on their innate ways of learning when playing DragonBox because, in doing so, they become more self-reliant, they also learn how to learn.

DragonBox Algebra 5+ teaches how to solve linear equations but it also lays the foundation for further algebra learning. It demystifies algebra and gives players confidence in mathematics.

This guide shows home school teachers how to use DragonBox Algebra 5+ to teach basic equation solving to young kids, whilst having a good experience.

DragonBox is based on the following pedagogical principles:

- Students learn more when they are engaged.
- The most important factor to learning is feedback and it should be immediate to be effective.
- To feel mastery is key to staying motivated.
- Students should be presented with challenges that match their level of mastery.
- Students should be assessed in a formative, non-intrusive way.
- Discovery learning is much more effective than instructional-based teaching.
- Students learn differently and at different paces.

Age recommendations:

DragonBox Algebra 5+ is recommended from age 5 and up, but It is important to note that it is meant to be an engaging, and motivating experience. Young kids have a lot to learn and it is hard to argue that early elementary kids should be prioritizing algebra. It is, however, very motivating for young kids to feel like they are doing something that older kids do, and we strongly believe that positive and challenging math experiences at an early age can have a huge impact on children's attitudes towards mathematics. DragonBox Algebra 5+ can be used both to stimulate kids that are under challenged, and to improve the attitudes of demotivated students.

How to use DragonBox Algebra 5+ in home school:

How you should use DragonBox Algebra 5+ depends largely on your goals and the mathematical abilities of your child. It can be used as a fun and motivating way to expose your child to higher level mathematics, or as a fun activity in it's own right. If you feel that your child is ready to start to solve basic equations, we recommend you use the following procedure to transfer what they have learned to pencil and paper equation solving:

Getting started:

1. Make sure your child has a basic understanding of the 4 basic operations (+, -, x, :)
2. They understand what solving a numerical equation means.
3. They understand what a negative number represents

Tip 1:

For number 2, it should be possible to find some introduction videos on youtube or Kahn Academy, but it is certainly a good idea to start with concrete examples:

Example 1:

Take a box and put some marbles or pebbles in it. Ask the children to guess how many pebbles are in the box given the total number of pebbles you started with. When this operation is well understood, write the corresponding equation. Then ask children to solve that kind of equations without box or pebbles.

Tip 2:

For number 3, introduce the child to the negative numbers as the bad guys and the positive ones as the good guys. When a bad boy meets a good guy, they cancel each other out. Additions of negative and positive numbers are just a battle. The question is who wins and how many guys are left at the end.

Example 2:

(-2)+5+(-6)=?
8 Good guys vs 5 bad guys, Good guys win and there are three of them left.
So (-2)+5+(-6)=(-3)

From playing the game to solving equations on paper

1. Play a chapter and write down the rules you have learned in that chapter.

2. Take an equation from the game and solve it on paper. When writing the equations on paper, make sure you have enough space between each element in order to draw squares around them to resemble the cards in the game. This will make it easier for students to associate between the strategies used in the games and equations on paper

3. Solve the equations specifying the strategies and rules from the game. Use one new line for each change in the equation.

4. Stress that operations have to be made on both sides of the equation and make sure you keep the mood light and positive. Math should be fun and your allowed to make mistakes.

5. Enjoy the game together as a family!