

The Thinking Straight Way

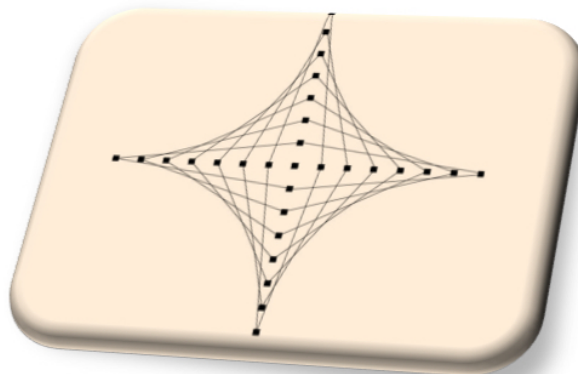
*Following is a description of a way to improve yourself. It is called **Thinking Straight**. It uses a combination of drawing, arithmetic, and a discussion of inspiration. It is based on teaching experiences between 1976 and 2018 that are described in the paper, "A possible relationship among emotional intelligence, STEM, and algebraic scores in prison" that can be found at <https://www.bickart.org>.*

The main thing in this Thinking Straight program comes from facing your self-worth. If you do not believe in yourself, there is little chance that you can change your thinking. But – remember this – everyone has the ability to believe. Every person – YOU - can believe that you are worth it. You can always increase your worth, your thinking, and your abilities, by increasing your belief. This is called inspiration – and we all need it – and we can all have it.

So, let's get on with it. I'll keep reminding you about inspiration, then we'll do some arithmetic together. Get ready to see improvement. I have helped students from 3rd grade to adult increase their ability to do algebra, just by doing arithmetic while working on their self-worth. But before that, let's start with some drawing to warm us up.

Every form is made out of two things and two things only – **straight** and **curved** lines.

Some would say that straight and curved lines are the Divine way of re-creating creation! Ancient cultures drew linear forms, which became symbols, which became written alphabets. The Renaissance mathematician and astronomer, Johannes Kepler (1571-1680), said: "...God in His ineffable resolve chose straightness and roundness in order to endow the world with the signature of the Divine."



So, if you want to give your life a lift - try sharpening your thinking, by sharpening your pencil. Here are some great (and fun) exercises to make beautiful designs and do some simple arithmetic. But watch out - you may just be learning how to think straight, walk straight, and straighten out a few bumps in your life!

Dimensional Analysis

This is the arithmetic part. It's called Dimensional Analysis. It may sound complicated, but doing it is really quite simple. I have taught this to many students from 3rd grade to adult and found that everyone I have ever taught it to could do it. Instead of talking about it, let's jump in. Say you wanted to calculate how many inches are in a mile. Here's one way to do that ...

1. How many inches are in a mile?

$$\frac{12 \text{ in}}{1 \text{ ft}} \times \frac{5,280 \text{ ft}}{1 \text{ mi}} = \frac{\text{in}}{1 \text{ mi}}$$

2. How many minutes are in a year?

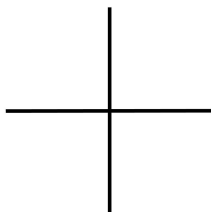
$$\frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hrs}}{1 \text{ day}} \times \frac{365 \text{ days}}{1 \text{ yr}} = \frac{6 \times 10^5 \text{ min}}{1 \text{ yr}}$$

Straight Line Thinking Exercises

These are great EXERCISES that do wonders while you are having fun! It may sound like these exercises are too simple to have anything to do with math or arithmetic – but trust me, they do. Do them before you do math and watch your thinking become

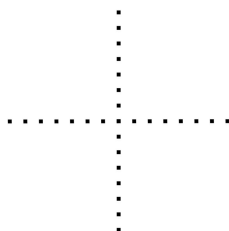
clear and straight. *And watch your math get easier!*

Exercise #1 Draw a
If you went up or down, now
sign.



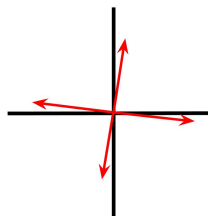
straight line with your own hand that is about 4 inches long.
do it again from side to side. It should look like a giant plus

Exercise #2 Do the same as Ex. #1, but
that are in line.



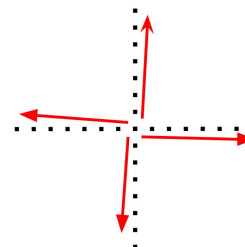
instead of drawing solid lines; make dots

Exercise #3 Now, make the same plus sign; but start at
four two inch lines that go out to the four directions.



the center dot and make

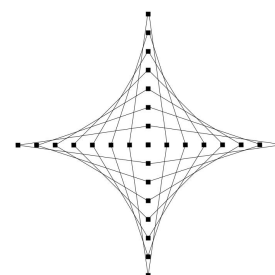
Exercise #4 Now do Ex. #3 with dots.



Exercise #5 **Curved lines from straight lines!!!**

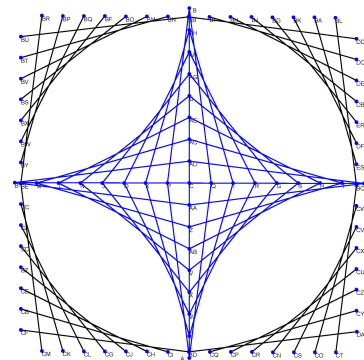
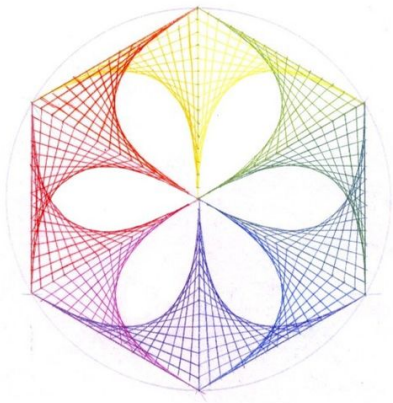
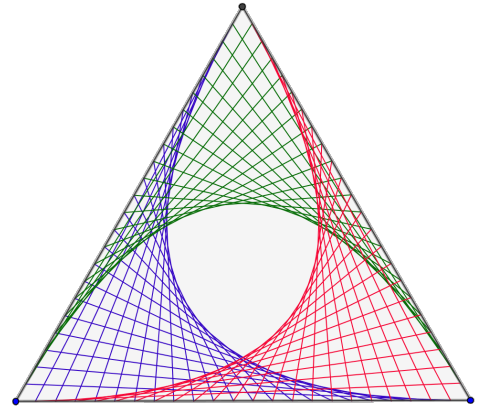
Here's the last exercise. This one is harder; but it's really fun. You're going to end up with a plus sign of dots of the same size; but this time, all four lines going out from the center will have exactly 8 dots. Here's how:

- Start by making the center dot.
- Now, go to the farthest end of your line and make a dot.
- Now, picture your line and make the dot that is half way.
- Now, make the two dots that are half way in between your two spaces. You should have 4 dots.
- Now, make the 4 dots that fill in the half way spaces. Your first line is done – it should have 8 dots.
- Now, make the other three dotted lines the same way – each should end up with 8 dots.
- Finally – *and here's the fun part* – connect the farthest out dot in each line to the closest in dot by making a solid line. Keep connecting the second farthest dot to the second closest dot, then the third, and so on. You should get this great design. It appears to have curves!



String Designs

We may make some of these designs with string or pencil. It improves your ability to think straight.



References

Bickart, J. (2018). *The next version of you: 12 stories that highlight the use of intuition to update your life.*