

## Activity: Central Tendency and Spread

A random dot stereogram or Magic Eye image is a seemingly random collection of dots or shapes with an embedded 3-D image.

A study was done to see if people could “fuse” the image faster if they knew the shape they were looking for.

The results of the experiment are shown in the table below. Listed is the number of seconds the subjects needed to correctly observe the image.

The group NV was given no information, while the group VV was given visual information about the shape.

NV (group did not have visual information about the image)	VV (group had visual information about the image)
47.2	19.7
22.0	16.2
20.4	15.9
19.7	15.4
17.4	9.7
14.7	8.9
13.4	8.6
13.0	8.6
12.3	7.4
12.2	6.3
13.0	6.1
10.3	6.0
9.7	6.0
9.7	5.9
9.5	4.9
9.1	4.6
8.9	3.8
8.4	3.6
8.1	3.5
7.9	3.3
7.9	3.3
6.1	2.9
5.6	2.8
4.7	2.4
4.7	2.3
3.9	2.0
3.1	1.8
2.1	1.7
2.0	1.6
1.9	1.4
1.7	1.2
1.7	1.1

1. Find the quartile values and the interquartile range.

2. Calculate the mean and the standard deviation for each group (manually or with technology).

3. Were the subjects who were told what the image was faster at identifying it? Which group was more consistent?

4. Get the information from you teacher about the particular image to observe. Record the time in seconds required identifying the hidden 3D image. Participate in the class study, share your data with the class.

5. Extension. For the class data repeat 1 – 3 steps.

6. In this study what other variables should be controlled?

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image1.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image2.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image3.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image4.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image5.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image6.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image7.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image8.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\Experiment group NV (no information about the image)\** find the **image9.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\** find the **image1.jpeg** and **hidden1.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In **Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\** find the **image2.jpeg** and **hidden2.jpeg**.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

**In Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\ find the image3.jpeg and hidden3.jpeg.**

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

**In Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\ find the image4.jpeg and hidden4.jpeg.**

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

**In Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\ find the image5.jpeg and hidden5.jpeg.**

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

**In Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\ find the image6.jpeg and hidden6.jpeg.**

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

**In Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\ find the image7.jpeg and hidden7.jpeg.**

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\ find the image8.jpeg and hidden8.jpeg.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.

In Handouts\Ms. Sediako\MDM4U\Magic eye activity\ Experiment group VV (the group is given the information about the image)\ find the image9.jpeg and hidden9.jpeg.

Record the time required to see the hidden 3-D image.

Try different images from the same folder.