

## THE FIGHTER PILOT CHALLENGE: IN THE BLINK OF AN EYE

To be a fighter pilot you must have very fast reactions – travelling at speeds of over 2500 km per hour (twice the speed of sound) means about 700m every second! So splits of a second can make all the difference, you blink your eyes and you've moved an incredible 140m! Could you respond to outside events with minimal delay and take appropriate action... let's test your reaction time?

### Step 1

- Get a 30cm ruler...
- One person holds the ruler near the 30cm mark and lets it hang vertically...
- The other person places their thumb and index finger either side of the 0cm mark ready to catch it when it falls - their fingers shouldn't touch the ruler.
- Without warning the person holding the ruler lets go and the subject tries to catch the ruler as soon as possible.
- The level (in cm) just above the subject's first finger where the ruler was caught is recorded.
- Each person is tested 5 times and their results recorded in the table below

Trial 1	Trial 2	Trial 3	Trial 4	Trial 5

### Step 2

Calculate the Mean score of your 5 trials

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### Step 3

Collect the Mean scores from 14 other students and write them in the table below

Mine	1	2	3	4	5	6	7	8	9
10	11	12	13	14					

### Step 4

Calculate the Mean of the class data

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### Step 5

Find the Mode of the class data

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Step 6

Order the class data from smallest to biggest and find the following

Minimum	Q1	Median	Q3	Maximum

Step 7

Construct a box - and - whisker plot based on the information gathered in Step 6

**How Did You Do?**

**DISTANCE – REACTION TIME CONVERSION TABLE**

Catch Distance (cm)	Reaction time (milliseconds)	Catch Distance (cm)	Reaction time (milliseconds)
1	50	16	180
2	60	17	190
3	70	18	190
4	80	19	200
5	90	20	200
6	100	21	210
7	120	22	210
8	130	23	220
9	140	24	220
10	140	25	230
11	150	26	230
12	160	27	230
13	160	28	240
14	170	29	240
15	170	30	250

**REACTION TIME RATING**

Reaction time Rating	Comment
0-50 Ultra-fast	A clairvoyant catcher... are you cheating?!
50-130 Superb	Impressive, do you play computer games? Next stop, F16!
131-175 Excellent	Well done, do you text a lot?!?
176-200 Good	Keep trying, you're not top gun yet!
201-240 Average	Not bad – but you're just Joe Average.
241-250 Fair	You'd get faster if it were money instead of a ruler!
251+ Slow	...ouch! Did the ruler hit your foot? Keep trying!!!