



## Movie Mathematicians.

For Year 8, Year 9, Year 10, Year 11 students.  
Level 4, 5

### What to do.

### For students.

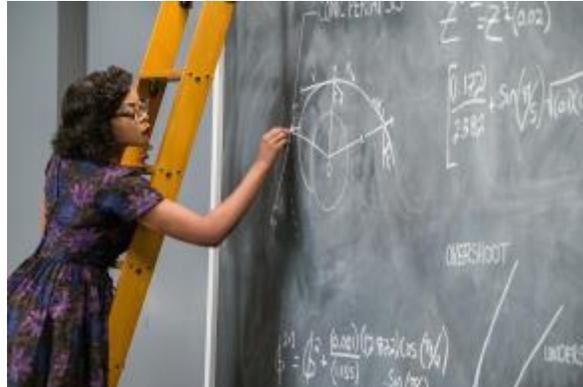
1. You can work with a friend as a team of two.
2. You may need a map or an atlas.  
However there are places on the internet which provide maps. Try GoogleEarth.
3. Do the tasks and enter your answers in your maths book.
4. When you have finished all 10 tasks check your answers with your Teacher.
5.  Each task has some road clues which give you some ideas and information about the problem.
6.  Each task has some maths clues which will give you mathematical ideas to solve the problem with.
7. Your task is to find the answer to the problem proposed.  
Some are hard and some are easy!  
You may need to do research to find the answer.
8. There are 10 tasks in this race.
9. The codes are easy transformation codes.  
Just rearrange the letters!
10. When you finish and have checked your answers look where you are on the table. Are you brilliant? Or maybe need to do the trip again and improve your result!
11. There are four Maths Week Trips available this year. Some have very tricky trippy questions!
12. Good luck !



# Movie Mathematicians.

Movies about famous mathematicians have been popular in the last few years.

## Task One. Katherine Johnson.



Katherine Johnson is a mathematician who calculated flight paths for missions to the moon in the early days of NASA. She lives in the U.S.A. and is now 98 years old. Her work has finally been recognized with the award of the Presidential Medal of Freedom in 2015 and a very well received movie in 2016.



What is the name of the movie?



Road clues.



Maths clues.

The movie's title is in code here.  
The code is a transformation type code.

**G H C C D M E H F T Q D R**

**Name the Movie!**

Write your answer into your maths book. We check your answer at the end of the trip!

## Task Two. Srinivasa Ramanujan.



Srinivasa Ramanujan grew up very poor in Madras, India. He had no formal schooling in maths and wrote all his discoveries into a note book.

He wrote just formulae and no working or explanation.

People didn't understand! Many of his discoveries were later proved to be true!

He won admittance to Cambridge University in England and became a pioneer in mathematical theories.

He is recognised as one of the greatest mathematicians of all time.

He was born in 1887 but sadly he died 1920 when he was just 32 years old.



Road clues.



Maths clues.

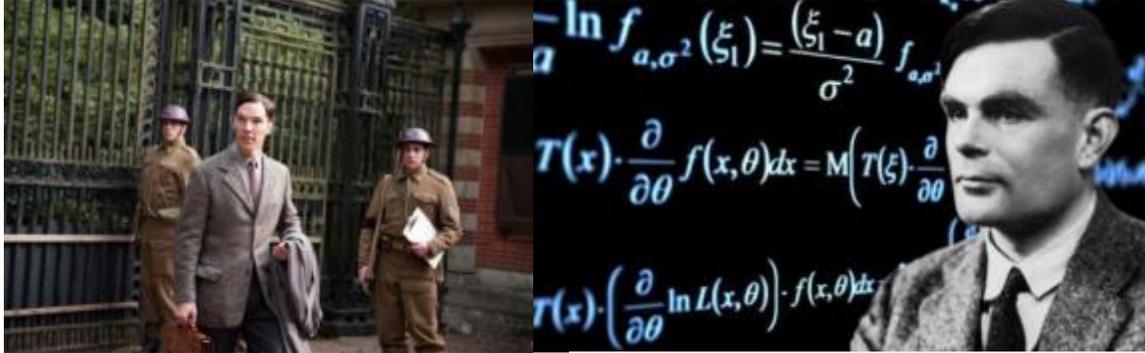
The code is a null code.  
Cross out the letters Srinivasa Ramanujan.  
The name of the movie appears!

**STRHI ENMIA VNAWS HAKRN  
AEMWA INNUP JIANN ITY**

**What is the name of the movie?**

**Write your answer into your maths book. We check your answer at the end of the trip!**

### Task Three. Alan Turing.



In 1939, after Britain declared war on Germany, Turing was accepted by Commander Alastair Denniston, of the Royal Navy, for a code-breaking job at Bletchley Park, working alongside other mathematicians.



They are instructed to break the Enigma codes that the Germans use to encrypt their communications with U-Boats in the Atlantic. These submarines were attacking and sinking the British and American shipping bringing food to Britain.

In leading the section responsible for the code-breaking Turing designed logic engines which were the precursor of the modern computers we use today.



Road clues.



Maths clues.

The code is a translation code.  
Try reading backwards.

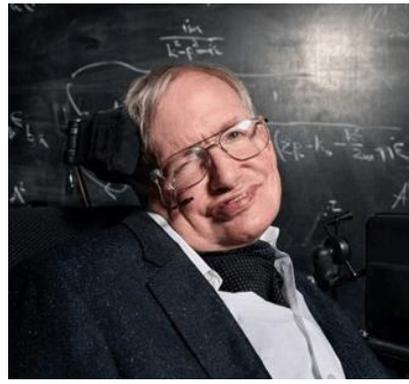
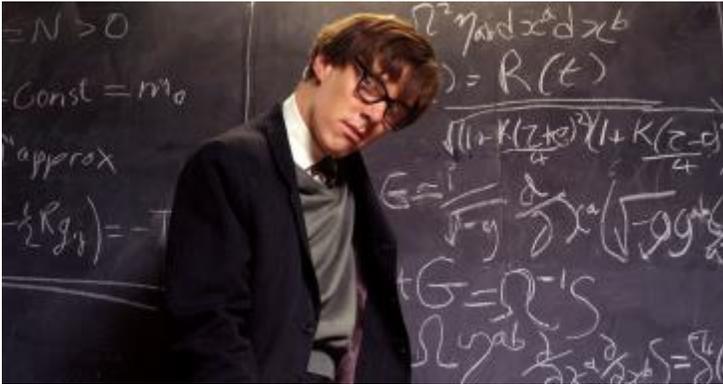
EMAG NOIT ATIM IEHT

What is the name of the movie ?

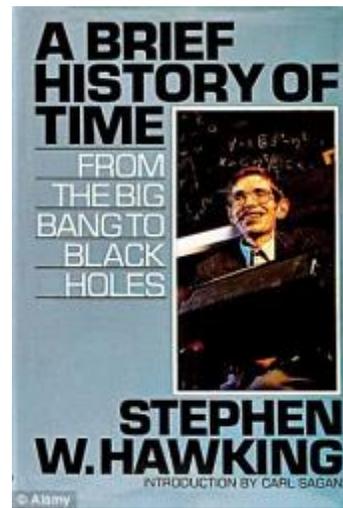
Write your answer into your maths book. We check your answer at the end of the trip!

## Task Four.

## Stephen Hawking.



In 1963, Cambridge University astrophysics student Stephen Hawking (Eddie Redmayne) begins a relationship with literature student Jane Wilde (Felicity Jones). Although Stephen excels at mathematics and physics, his friends and professors are concerned over his lack of a thesis topic. After Stephen and his professor Dennis Sciama (David Thewlis) attend a lecture on black holes, Stephen speculates that black holes may have been part of the creation of the universe and decides to write his thesis on time. Stephen Hawking has become one of the foremost mathematicians of our time.



Road clues.



Maths clues.

It's a x,y code!

5,4 3,2 5,1  
 5,4 3,2 5,1 5,3 3,4 5,5  
 5,3 1,2  
 5,1 2,5 5,1 3,4 5,5  
 5,4 3,2 4,2 4,3 2,2

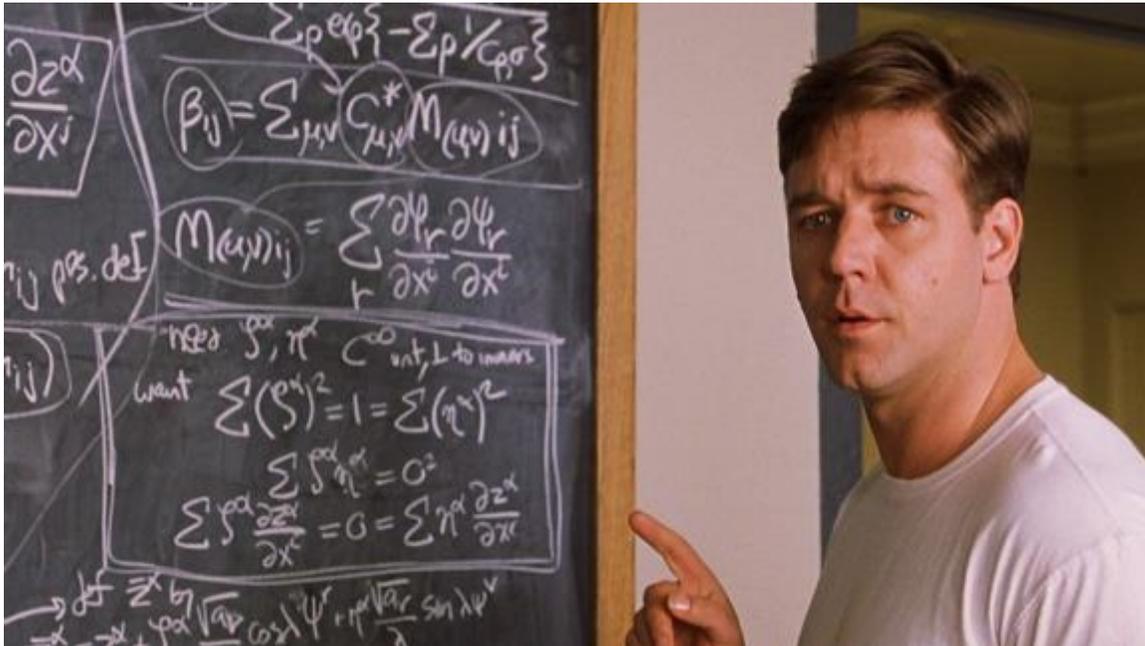
	1	2	3	4	5
1	A	B	C	D	E
2	F	G	H	I	J
3	K	L	M	N	O
4	P	Q	R	S	T
5	U	V	W	X	Y/Z

What is the name of the movie ?

Write your answer into your maths book. We check your answer at the end of the trip!

## Task Five.

## John Nash.



This movie was made in 2001 and is a biographical movie about the life of a brilliant mathematician, John Nash.



John Nash won the Nobel prize in Economics for his work in Game Theory. He also suffered from paranoid schizophrenia and in his early days believed he worked for the C.I.A. which was not true. He endured delusional episodes before being discovered and helped.



Road clues.



Maths clues.

The code is a translation code.  
Two letters onwards!

**YZCY SRGD SJKGL B**

**What is the name of the movie?**

**Write your answer into your maths book. We check your answer at the end of the trip!**

## Task Six.

## X + Y



A teenage math prodigy finds new confidence and new friendships when he lands a spot on the British squad at the International Mathematics Olympiad. From suburban England to bustling Taipei and back again, Nathan builds complex relationships as he is confronted by the irrational nature of love.



Road clues.



Maths clues.

This movie was originally titled “A Brilliant Young Mind”. It was released in the U.S.A. in 2014 under this title.

However in the rest of the world this British movie was released under a different name.

$$3x + 4y - 5z - 2x + 5z - 3y$$

What is the name of this movie?

Write your answer into your maths book. We check your answer at the end of the trip!



**This is the finish! You have finished!**

**Now check your answers with your Teacher**

<b>6 correct.</b>	<b>Excellent! Awesome!</b>	
<b>5 correct.</b>	<b>Very good! Well done!</b>	
<b>4 correct</b>	<b>Pretty good! Amazing.</b>	
<b>3 correct</b>	<b>Good! Pleasing.</b>	
<b>2 correct</b>	<b>OK! Try it again!</b>	
<b>1 correct</b>	<b>Could be better! Try again!</b>	
<b>0 correct</b>	<b>Better start going to the movies!!!!</b>	