

Mathématiques sans Frontières

This is a truly international competition organised every year by the Academie de Strasbourg. Scottish schools have taken part since 1993!

S4 and S5 class teams take part. They answer the same questions 1 to 10 and then S5 teams have a further three questions to tackle.

What makes it different?

Year on year we get really positive feedback about how much the pupils enjoy it. They always mention the teamwork aspect as being great fun – the whole class is the team. And the foreign language question makes it different to other activities they do. To sum it up

- There's an international dimension – more than 40 countries take part
- It's a team competition with a single entry from each class
- One or two questions will be in a foreign language – French, German, Italian and Spanish
- The foreign language questions have to be answered in a foreign language too
- It encourages teamwork and problem-solving, the questions are challenging
- It is very suited to Curriculum for Excellence

and

- Pupils enjoy it!

What are the questions like?

Here's an example of the foreign language question. It has to be answered in German, French, Spanish or Italian using a minimum of 30 words. So the teams do need to explain their answer. They are using their language skills in an extended way.

Pierre doit lire un livre pendant ses vacances. Il calcule qu'il doit lire 30 pages par jour pour y parvenir.

Les premiers jours des vacances, il ne respecte pas ce rythme ; il lit 15 pages par jour. Pierre se dit alors qu'il peut garder ce rythme jusqu'à la moitié du livre s'il lit la deuxième moitié à raison de 45 pages par jour.

Que penser de son raisonnement ? Expliquer.

Piero deve leggere un libro durante le vacanze. Per riuscirci calcola di dover leggere 30 pagine al giorno.

Durante i primi giorni di vacanza non rispetta, però, questo ritmo; legge, infatti, solo 15 pagine al giorno. A questo punto, Piero considera di poter

proseguire così fino alla metà del libro a patto di proseguire la lettura della seconda metà in ragione di 45 pagine al giorno.

Che pensare di questo ragionamento? Spiegare.

Pedro debe leer un libro durante sus vacaciones. Calcula que debe leer 30 páginas cada día para poder acabarlo.

Los primeros días de las vacaciones, no respeta este ritmo; lee 15 páginas por día. Pedro piensa entonces que puede seguir este ritmo hasta la mitad del libro si lee la segunda mitad a razón de 45 páginas por día.

¿Qué piensas de su razonamiento? Explicar.

Peter muss in seinen Ferien ein Buch lesen. Er rechnet sich aus, dass er 30 Seiten pro Tag lesen muss um es zu schaffen.

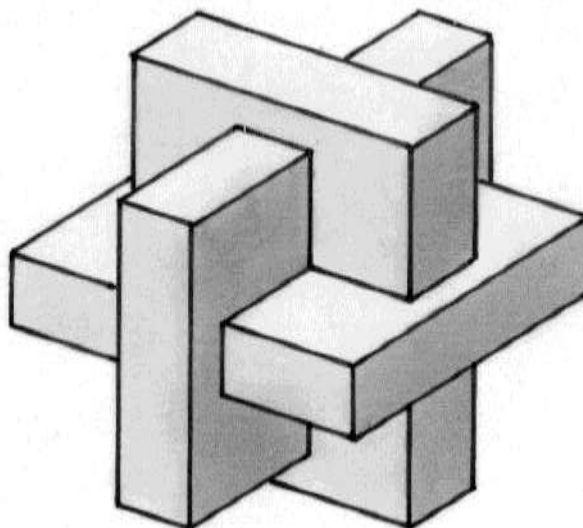
In den ersten Ferientagen hält er sich nicht an diesen Rhythmus. Er liest nur 15 Seiten pro Tag. Peter sagt sich, dass er diesen Rhythmus bis zur Hälfte des Buches beibehalten kann, wenn er bei der zweiten Hälfte 45 Seiten pro Tag liest.

Was haltet ihr von seiner Argumentation? Begründet.

There are always questions around curves, diagrams and solids. This is a challenging example.

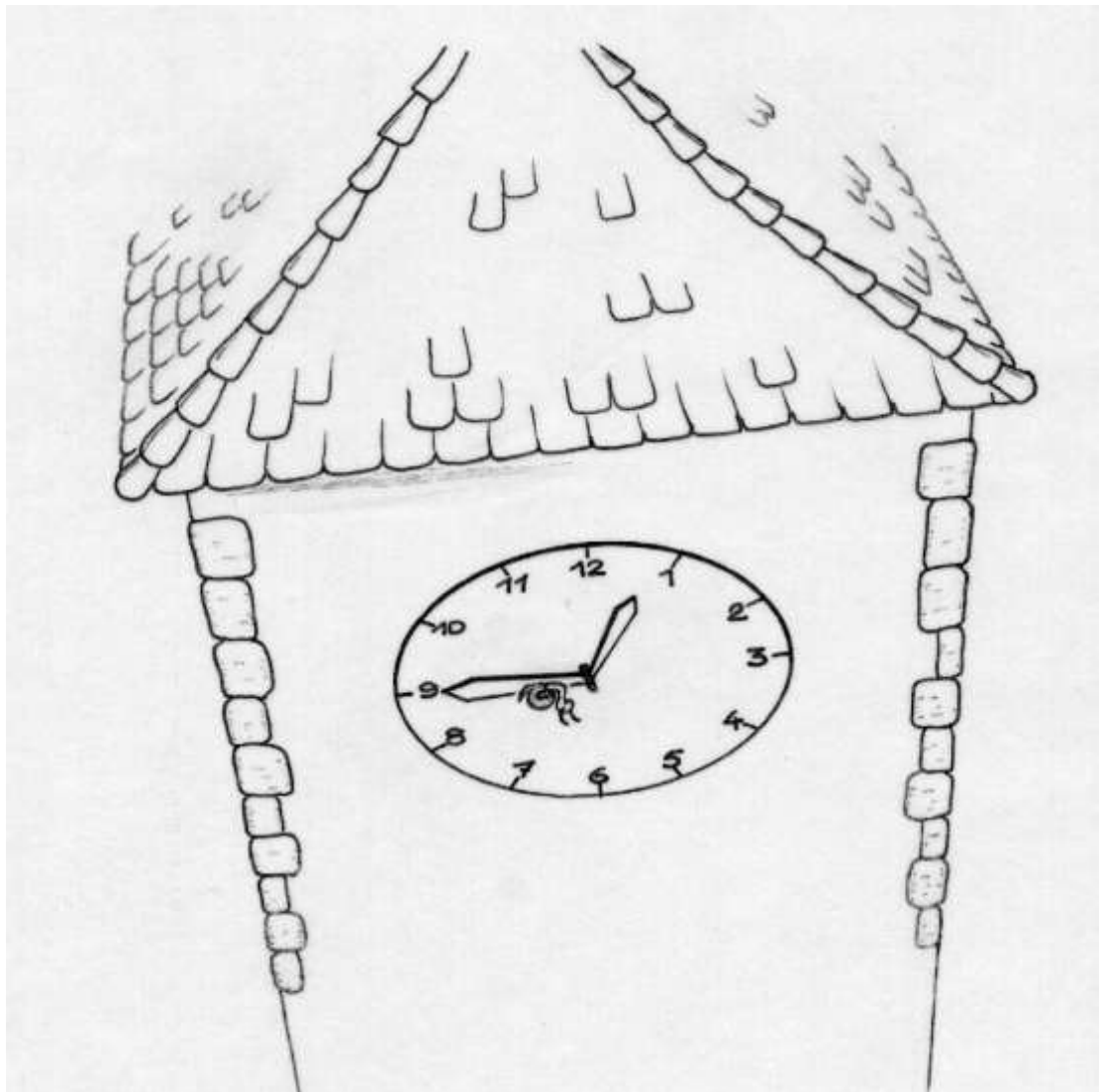
3 inter-locking cuboids make up the solid object shown here. The 3 cuboids have the same dimensions 2 cm x 8 cm x 10 cm.

Calculate the volume of the solid explaining your answer.



And here is a good curve-sketching question

A snail crawls carefully at a constant speed along the big hand of the town hall clock. Starting out from the end of the hand it takes an hour to travel the length of the hand and reach the centre of the clock. The hand is 90 cm long.



Draw the face of the clock to a scale of 1:10 and sketch on it the path traced out by the snail.

Who takes part?

In 2010 30 countries took part, involving 7000 classes and over 200,000 young people. China has taken part twice with a small number of schools. In Europe we get entries year on year from Germany, Italy, Poland, France, Romania, Switzerland, Spain, Hungary, Austria, Lithuania, Bulgaria and the Czech Republic.

How do we get involved?

The competition in Scotland is run by North Lanarkshire Council on a simple timeline

December	The practice test is sent out to schools. They are invited to register for the competition
March	The competition takes place on the same day right across the world
April	The top ten entries in S4 And S5 are notified
June	A prize-giving ceremony is held in Heriot Watt University. All participants get their certificate by post.