

An activity for Maths/Science (Secondary)

Aim

To demonstrate that large numbers and statistics make strong headlines and leave a huge short term impression on people but maths is a useful tool when calculations are linked with personal stories.

What to tell your students

Explain that on January 27th each year thousands of people throughout the UK commemorate HMD. It is 65 years ago this week that the Nazi death camp Auschwitz-Birkenau was liberated. Newspapers will carry stories about those the Nazis persecuted and murdered. On this day people also remember the millions who died in subsequent genocides in Cambodia, Rwanda, Bosnia and present day Darfur.

Suggest most people assume that history teachers will be busy this week, after all the Holocaust, Cambodian, Rwandan and Bosnian genocides are part of history. They might also expect Citizenship students and teachers to work hard, because to understand the Holocaust we have to think about how human beings behave. RE teachers might mention the Holocaust in RE, after all millions of the people persecuted by the Nazis suffered because of their religious beliefs but did you know that most of the people studying the Holocaust and more recent genocides this week will be using maths/science all the time, perhaps without even realising it?

SHOW POWERPOINT SLIDES

They use numbers to explain how many people were murdered.

(Show slide one which lists estimated numbers of people who died or were persecuted in the Holocaust, Cambodia Rwanda, Bosnia and Darfur)

They use numbers when they try to explain how many people the Nazis persecuted and how many groups were affected by this persecution.

(Show powerpoint slide 2 which shows estimated numbers of victims for each group)

When thinking about how terrible plans made by the Nazis were, people often use the Nazis' own sinister calculations in order to demonstrate how many Jewish people all over the world the regime planned to murder.

(Show powerpoint slide 3 of the Wannsee document calculations)

These large numbers are shocking and we could say that without maths/science people couldn't tell others what happened. This week learning about the Holocaust is important in all subject areas but in this class we have a special responsibility on Holocaust Memorial Day, a responsibility to help people understand the numbers and what they really represent. We need to find ways to make people think about the number of victims and the suffering behind them.

Two tasks

Explain that students are going to find different ways to use maths and science to help people really understand the effect the Holocaust had on real people. **Tell** them that maths/science students can open people's eyes to things which really happened and that there is more to think about than simply quoting headline making numbers.

Challenge students to use their skills to help people make sense of the numbers and relate them to human experience.

Task one

Give students a map showing countries where people became targets for genocide. **Ask** students to look up the population of that country just before the genocide. Then **give** them the number of people who were murdered or were displaced. Use maths to calculate the real proportion of citizens affected by genocide. Set it in context by noting that the population of a town like Piotrkow was about 50,000 and 15,000 of these people were Jews so once Jewish people were sent away to ghettos, camps and death how many people were left in the town? Calculate the percentage of people left and the percentage who disappeared. Read the Ben Helfgott case study or conduct your own research and complete a similar task for Kigali in Rwanda, Phnom Penh in Cambodia or Srebrenica in Bosnia.

Next **give** students the latest population figure for their own village, town or city. If the above percentage of people disappeared how many would be left in the town? How would the town be changed?

Think about the number of people it takes to fill the nearest football stadium. **Ask** how many "football stadium sized" groups of people would have suffered/ disappeared?

Explain that to help people understand large numbers we need to encourage them to think about sizes they can visualise and to think about the numbers representing real places and people.

Task two

Explain that in the Rwandan Genocide it is estimated that 1,000,000 people were murdered in only 100 days. Understanding numbers helps people grasp the scale of the action. But we have to be careful. As mathematicians/scientists we know that numbers are important, by using them we can clearly demonstrate how Pol Pot's Khmer Rouge almost destroyed Cambodia. Numbers make things like this easy to see and people take notice of headlines which quote them. However, on Holocaust Memorial Day we don't want people to think only about the numbers and forget about the people

themselves. It would be terrible to think only about statistics because we might be tempted to forget that we are talking about human beings like us.

How can we use the figures to remember something about how millions of individual men, women and children suffered? Here is a way to use our skills to help everyone focus on the effects of persecution and discrimination on the lives of individuals.

We are going to help people by asking them to focus on food, something which interests everyone as we all need it to sustain life.

(Show powerpoint slide 4 - ghetto ration card)

Tell the students that this is a Polish-Jewish ration card from the time of the Holocaust. In occupied Poland, meagre food supplies were distributed on the basis of ration cards issued by the authorities. During the war food was rationed but food rations allocated to Jewish people in Poland were far smaller than those given to the rest of the population. Then the Nazis began to imprison Jewish people in ghettos and once there they got even less food because the Nazis controlled everything coming in and out of the ghettos.

Give students an information sheet containing a summary of the following:

Before the ghettos were set up ration cards allowed each Jewish person to have:

70-250g of bread

250g of sugar

A few potatoes

And sometimes a little jam, a small amount of cabbage and beets.

Jews were not allowed to buy meat, poultry, fish, fruits, vegetables, eggs, or white flour. Their diet consisted mainly of potatoes and bread.

You could also give students a little background detail

Food supplied on ration cards was never enough and people tried to buy more. This meant that Jewish families tried to pay for their food by selling their possessions to non-Jewish people (See Ben Helfgott and Hugo Gryn case studies).

Once Jewish people were imprisoned in the ghetto they had even less to eat and eventually the evidence from the Oneg Shabbat archive shows that people were starving.

Inside the ghetto soup kitchens were set up to help people but all that could be provided was thin soup. By 1941 the nutritional value of one portion of soup in the Warsaw ghetto was 110 calories.

Hunger was all around, people ate potato peelings and anything they found in the streets. Anyone walking down a ghetto street with a package that looked like it contained food had to guard it with care in case it was grabbed by someone desperate to eat. In the Ben Helfgott case study you can read more about how people tried to smuggle food in order to survive.

AND also give them an account of ghetto life written by a survivor called Eliezer.

Eliezer remembers

“Living in the ghetto, Jews lived on rations. You were given half a loaf of bread for 5 people ...I remember we were all sitting together and when my Dad divided this half load of bread among 5 people, cutting pieces of bread so that everyone would have more or less the same portion, my mother always took a part of her bread and gave it to me....”I’m not hungry” she used to say and gave it to me.”

You will need to give them a modern day healthy living guide. You will find one on <http://www.food.gov.uk/images/pagefurniture/eatwellplatelarge.jpg> plus a calorie counter from a healthy living magazine.

Here is a diet sheet, based on Government advice.

Diet Sheet

A daily diet should consist of

Fruit and vegetables 33% at least five portions a day, where one portion=80g

Starchy foods 33%, to form the basis of each meal e.g. 75 g dried pasta, or one large potato, or 75g dried rice.

Milk and dairy products 15% in three portions a day e.g. 30g cheese, 200ml milk,150g yoghurt

Protein (meat, fish, eggs or beans, nuts, lentils for vegetarians) 12%

With 8% left for treats high in fat or sugar.

And a calorie counter from a healthy living magazine.

Instruct students to read the information and work through the following questions.

How many calories a day does a healthy child, teenager, man and woman need?

Look up the number of calories in one small cabbage, a turnip or beetroot, one potato and 250g of sugar. Assuming a month of thirty days, how many calories was a Jewish person likely to be consuming before Jewish people were confined to the ghetto?

Now think about life inside the ghetto and read Eliezer's words.

Look up the number of calories there are in one standard size loaf of bread.

Calculate the number of calories in half a loaf.

Calculate how many calories there would be in each portion once Dad divided it.

How many calories did Eliezer receive?

The number of calories in soup from a ghetto soup kitchen was 110

Today dieticians and medical experts recommend that a healthy adult males needs 2,500 calories a day, a woman 2,000 and a child aged between 5 and 10 1,800.

If a person in the ghetto only received rations of bread and soup calculate the number of calories missing from their daily diet.

Now think for a moment about how we use food today. First think about treats, food we eat but perhaps don't really need. Look at a selection of convenience food packages and/or an ice cream or chocolate bar treat wrapper. How many calories do these items contain? How do these compare with the number of calories eaten in the ghetto?

Next think about people who try to control their calories. Health experts at the Food Standards Agency recommend that someone on a slimming diet, who wants to lose a small but sensible amount of weight a week eat 1,500 calories a day. How does this compare with the ghetto diet? Why did so many people in the ghetto become ill?

Challenge students to remember what they ate yesterday, ask them to work out how many calories the food contained and to say how many more calories they ate than a person on the pre-ghetto rations.

Finally encourage students to present the findings of both tasks to the rest of the class and spend a few moments talking about how hard it would be to survive when a regime chooses systematically to discriminate against a group of people. Conclude by **reminding** the students that the calculations they have completed help us to understand something of the suffering behind the headline making numbers and that by giving people a new focus they have made a valuable contribution to HMD 2010.

(source for ghetto rations, Encyclopedia of The Holocaust (Gutman and Gutnamn), page 583)