

# Multiple heartbeats

## TEACHER NOTES



### Learning opportunities:

In this activity, children discover how to find their pulse and the number of beats their heart makes per minute. They will explore how this number changes following activity and have fun recording their results on multiple hearts.

Teachers can use the activity to support the children's understanding of how the heart pumps blood around the body. It can be tailored for different age groups by focusing on specific elements such as counting, time, multiples and symmetry.

Teachers can extend this activity in a follow-up session by using the data collected. For example, ranking activities in order of the number of heartbeats observed or creating bar charts.

### How to raise money:

Pupils can be sponsored for the number of heartbeats they record during the activity, or for the highest number of heartbeats they record. Alternatively, parents and carers can make a donation.

### What you'll need:

- A stop watch or timer
- Pen and paper

For the multiple hearts:

- Large sheet of paper
- Pencil
- Scissors
- Pens/pencils to decorate

This activity was created by Maths on Toast, the family maths charity. To find more activities online go to: [mathsontoast.org.uk](https://mathsontoast.org.uk)

### How to play:

1. Revise or introduce that a beating heart creates a pulse. How could we measure a pulse?
2. Model the activity by showing the children where to find a heartbeat.
3. Invite the children to find their own heartbeat. Once everyone has found theirs, time one minute and ask them to count the number of beats they feel.
4. Hand out stopwatches/timers, pens and paper to groups of two or three, ask children to practise counting and then record their heartbeats. Are there differences within their groups?
5. Ask the children what they think would happen to the number of heartbeats if they went for a walk/jumped up and down.
6. Experiment with activities (space allowing) and ask children to record their findings after each activity. How long does it take following activity to get back to each child's starting number of heartbeats?
7. Provide each child with a large sheet of paper, scissors and some colouring pens/pencils.
8. Demonstrate how to make a concertina fold and draw a heart, ensuring the sides of the heart touch the folds.
9. Once the children have completed the folds and drawn the heart, demonstrate how to cut. Why must part of the folded edges remain uncut?
10. Once children have cut out their multiple hearts, ask them to record the data they collected from each activity on the hearts and decorate.
11. Display the multiple hearts in the classroom.

### Extension ideas:

- Encourage pupils to think creatively about other ways to show their data. They could try bar charts, pie charts or graphs - or perhaps they could think of a different way to interpret their data?
- Can the children think of anything else they could measure/count after activity (eg breaths, temperature)?

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\*Number Day is supported by Man AHL and Maths on Toast, led by NSPCC.

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## PUPIL WORKSHEET



### Activity

#### How many times does your heart beat in a minute?

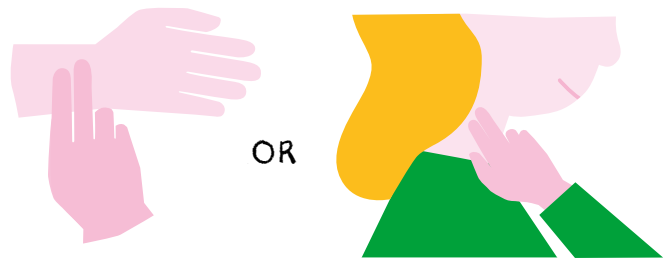
The heart is an amazing organ in your body. As it beats, it pumps the blood all around your body!

#### To measure your heart beat you will need:

- yourself
- a pen and paper
- a stopwatch or the timer on a mobile phone.

#### 1. Find your heartbeat:

The best places to find your heartbeat are on your wrist, or on your neck (just under your jaw bone, a few centimetres from your ear).

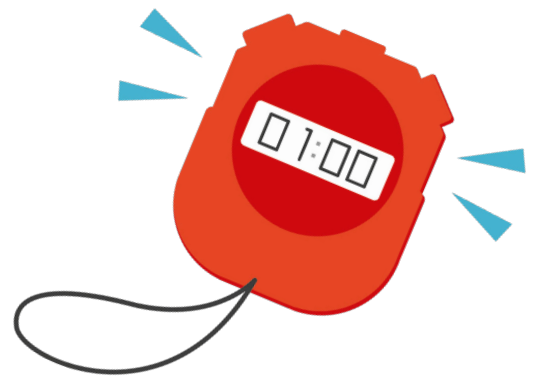


#### 2. Once you are confident you can feel it, practise counting the beats

1... 2... 3... 4...

#### 3. Now time one minute

Count how many times your heart beats in that minute. You might want to do it a few times, to check your results are similar.



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## PUPIL WORKSHEET



### What happens if I change my level of activity?

#### Why not experiment to find out?

Try measuring how many heartbeats you have in a minute after:

- going for a walk
- jumping up and down for five minutes
- as soon as you've woken up.

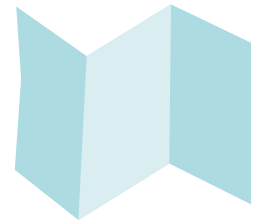
#### Why is this maths?

There's lots going on with this activity, can you spot it all? There is counting, time, multiples and even symmetry if you only draw half the heart. You're also recording data you've collected. Phew!

Then you could record your results on multiple hearts. See below to find out how.

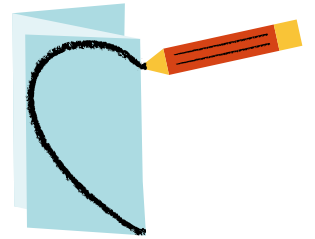
#### 1. Fold

Get a strip of paper and fold it, using a concertina fold (zig-zag fold) as far as it will go.



#### 2. Draw the heart

Draw half a heart with the fold line as the middle, making sure both sides touch the edges (do you know why?).



What happens if you draw a full heart?

#### 3. Cut it out

Remember to leave part of the folded edges uncut!



#### 4. Unfold and decorate

Unfold to reveal your multiple hearts. On each, record the activity level and your heart beats per minute. Then decorate!



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