# A WORLD WITHOUT SURVEYORS


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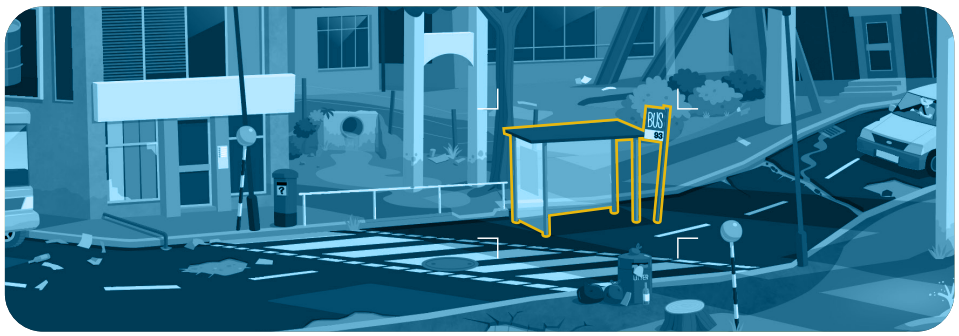
HEY IT'S ***MELISSA*** FROM ***EVERYPOINT***! AT WORK WE PROCESS ***MILLIONS*** OF IMAGES FROM PHONES, DRONES, CAMERAS AND EVEN AEROPLANES! WE CREATE ***3D VISUALISATION*** TO HELP SOLVE PROBLEMS. THIS IS THE FUTURE, EVERYTHING IS GOING DIGITAL!

NOW I NEED YOUR HELP. LOOK AT THE STATE OF MIDDLETOWN IN THE GET KIDS INTO SURVEY 'A WORLD WITHOUT SURVEYORS' POSTER AND TELL ME I WAS WRONG WHEN I SAID THAT THE WORLD NEEDED SURVEYORS! THANKFULLY I'VE MANAGED TO PULL IN SOME EMERGENCY HELP FROM ACROSS THE DATATIME STREAM -- INCLUDING THE GEOSQUAD -- AND YOU! CAN YOU HELP GET MIDDLETOWN BACK ON TRACK, AND PROVE ONCE AND FOR ALL THAT SURVEYORS ARE SUPER IMPORTANT TO OUR PLANET!

## TASK 1: PRIORITISE THE PANIC

(LITERACY LINKS - RETRIEVE, RECORD AND PRESENT INFORMATION FROM NON-FICTION / GEOGRAPHY OBJECTIVES - GEOGRAPHICAL KNOWLEDGE AND FIELDWORK)

When the GeoSquad arrived in Middletown, their first job was to assess the area and identify all the hazards - then, they had to decide what needed fixing first. This is one of the most important jobs a surveyor can do: scanning and analysing structures to identify potentially catastrophic problems, then helping to come up with a plan to fix things. Can you help the survey team to complete their analysis of Middletown, so the fixing-up can begin? Use the grid on the sheet to help!




| HAZARD | GRID REFERENCE | PRIORITY LEVEL | SOLUTION |
|---|---|---|---|
| *BUS STOP BUILT IN THE ROAD* | *E,2* | *AMBER* | *RELOCATE BUS STOP TO A SAFE PLACE FOR PEDESTRIANS AND REPAIR THE ROAD* |


## TASK 2: TEETERING TOWERS

(DESIGN TECHNOLOGY LINKS - DESIGN, MAKE AND EVALUATE STRUCTURES, USING TECHNICAL KNOWLEDGE AROUND STRENGTHENING, STIFFENING AND REINFORCING STRUCTURES)

Which brings us to an interesting question: what makes a building strong? EveryPoint help surveyors with visualising problems like this, turning images into 3D models to highlight areas of danger, helping to visualise the problems which need solving!

There's barely a building in Middletown that looks like the next stiff breeze won't knock it over! With the absence of surveyors, these structures have been poorly planned and even more terribly put together.

Rather than sticking swimming pools, playgrounds, and even a farmyard at the top of high rises, surveyors would have demanded and checked that these building were safe, strong and reliable. So, what makes a building really strong?

This is something you can explore yourself. Can you use the worksheet to undertake your own experiments into the kind of structures that are strongest? You can use a variety of materials, arrangements and surfaces - you can even go for a few world records! But before you get the Lego bricks out, you should know that the current record for a Lego tower stands at an astonishing 114 feet tall! And it's probably sturdier than most of the tower blocks in Middletown!

# TASK 3: KNOW YOUR LIMITS

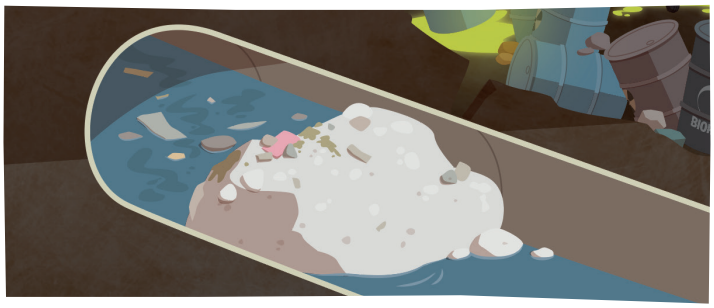
(GEOGRAPHY OBJECTIVES – PHYSICAL GEOGRAPHY & LOCATIONAL KNOWLEDGE / MATHS OBJECTIVES – MEASURES, AREA AND PERIMETER)

It's not just the roads, the utilities and the skyscrapers in Middletown that are a problem – even the houses and their owners have their issues! In H,2 you can find a resident who seems to think he can plonk new fence panels down wherever he pleases – including right across the cycle path, and over his neighbour's garden! This is called **encroachment**, and it's a really important issue for surveyors. If there is an argument over property boundaries, and where owners can and can't build, they'll call in a surveyor to establish exactly what belongs to who.

But do you know your boundaries? Can you tell exactly what area of your home and garden belongs to you, what belongs to your neighbours, and what might belong to someone else: a local council, for example? To get a better understanding of your boundaries, you could find an aerial view of your home using an online map service, then use that to make an aerial plan of the land that belongs to your family.

You could even measure out and mark up the perimeter, and use those measurements to work out the area of the land. Most importantly, you'll know exactly where your parents can and can't build – so they won't fall out with their neighbours like the man in H,2!

# TASK 4: FIGHT THE FATBERG!



(GEOGRAPHY OBJECTIVES – GEOGRAPHICAL KNOWLEDGE AND FIELDWORK / LITERACY OBJECTIVES – WRITING PERSUASIVELY)

There's some fairly gross sights to see around Middletown: trash all over the roads, waste water seeping onto the street, smog filling the skies from the stinking factories in the distance. But perhaps the most disturbing ecological danger lurks below the city's surface – deep in its sewer system. Hold your nose and have a look in B,1 at the waste pipe. That big ugly mass is called a fatberg. It's a rock-like mass of waste matter formed by the combination of flushed non-biodegradable solids, such as wet wipes and nappies, and fat, oil and grease deposits. A fatberg like this was found under Whitechapel, London in September 2017, only this example was a whopping 250 metres long (820 ft) and weighed over 130 tonnes. Officials estimated it would take two months and cost £2 million to destroy it.

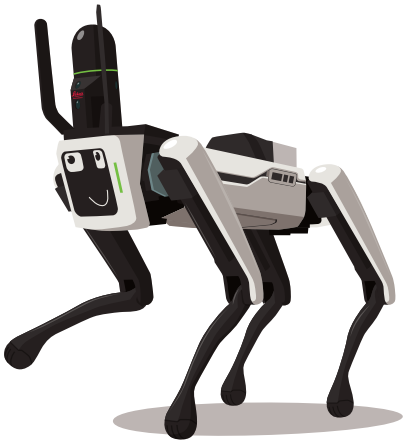
GeoSurveyors work hard for environmentalism. Their geological studies and the data they collect informs climate change campaigns and conservation efforts. Their urban planning focuses on responsible development – but it doesn't matter how well-thought-out their buildings and underground structures are if people are still going to dump the wrong stuff down the drain! Could you help their efforts by creating an information ad (it could be in the form of a video, a radio ad, a poster or a presentation) to remind people how to dispose of their household waste correctly? You could cover all areas of domestic refuse, from cardboard and tins to wet wipes and nappies! Let the fight against the fatberg begin!

# TASK 5: A PET FOR A MECH!

(GEOGRAPHY OBJECTIVES – GEOGRAPHICAL KNOWLEDGE AND FIELDWORK / DESIGN TECHNOLOGY LINKS – DESIGN AND EVALUATE)

Did you spot the robot in B,1? Setsuko's four-legged friend is one of many examples of robots being used by surveyors to explore spaces that it would be difficult or dangerous for a human to access... and there are a LOT of those places around Middletown! However, the rest of the GeoSquad are feeling left out – they don't have a robopet to help them! Could you design a robotic survey pet based on a real animal?

Think about the kind of places the GeoSquad have to explore, and what animals would be well-suited to the job. With help and permission from your guardian – share them on Twitter using the handle **@GetKidsIntoSurv** for your design to be featured on social media!



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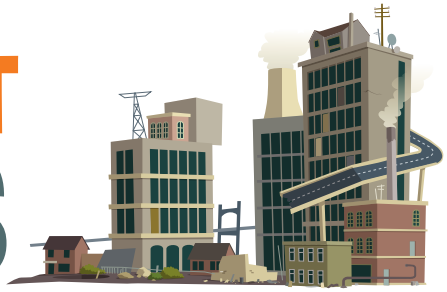

## TASK 1: PRIORITISE THE PANIC

Can you help the survey team to complete their analysis of Middletown, so the fixing-up can begin? Use this grid to help - some elements have been filled for you!

| HAZARD | GRID REFERENCE | PRIORITY LEVEL | SOLUTION |
|---|---|---|---|
| BUS STOP BUILT IN THE ROAD | E,2 | AMBER | RELOCATE BUS STOP TO A SAFE PLACE FOR PEDESTRIANS AND REPAIR THE ROAD |
| CYBERSHEEP GRAZING ON A ROOFTOP | G,6 | GREEN | |
| | F,1 | RED | |
| | | | USE THE GEOSQUAD TO LOWER THE HOUSE DOWN SAFELY |
| HELICOPTER ABOUT TO LAND ON A FLIMSY-LOOKING LEDGE | | | |
| | | | |
| | | | |

**PRIORITY LEVEL KEY:**

**GREEN = LEAST SEVERITY / AMBER = MODERATE SEVERITY / RED = GREATEST SEVERITY**

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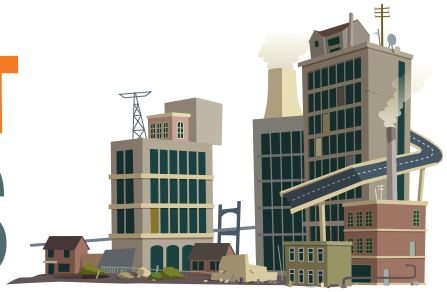

## TASK 2: TEETERING TOWERS

Can you use this worksheet to undertake your own experiments into the kind of structures that are strongest? Record your results as you go, and see what you can find out about making tremendous towers that won't be toppled easily!

| EXPERIMENT 1 | |
|---|---|
| Building Material | |
| Base | |
| Structure shape / building technique | |
| Height of first attempt | |
| Height of second attempt | |
| Height of third attempt | |

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### BUILDING MATERIAL IDEAS

- Lego bricks
- Jenga blocks
- Dry Spaghetti and marshmallow
- Books
- Recycled containers
- Deck of cards

### BASE IDEAS

- Floor
- Table
- Grass
- Mattress
- Desk
- Toy box
- Chair

### SHAPE / BUILDING TECHNIQUE

- Overlapping (brick wall)
- Straight stack
- Triangles
- Pyramid
- Circular
- Wall and roof

Use this space to write up your findings!



GET KIDS INTO SURVEY™