

# Buildtastic

Driving innovation as part of  
National Construction Week



[wsc.ac.uk/buildtastic](http://wsc.ac.uk/buildtastic)

# CONSTRUCTION CHALLENGE

Can you build a  
model house...  
entirely from  
food?

NASCENT



**PLACE 21**  
Connections, Qualifications  
and Character Strengths



**European Union**  
European  
Social Fund

a blended learning challenge, for Key Stage  
3 and up, at home or in school, developed by



# Contents:

<b>WHAT ARE YOU GOING TO DO?</b> .....	3
<b>YOU WILL NEED:</b> .....	3
<b>CROSS-CURRICULAR LINKS:</b> .....	4
<b>FIND OUT MORE: USEFUL LINKS</b> .....	5
WEB RESOURCE: The national curriculum in England .....	5
WEB RESOURCE: The Skyscraper Centre .....	5
WEB RESOURCE: Tallest Packaged Food Tower.....	5
WEB RESOURCE: STEM Learning - a Tower made from Spaghetti and Marshmallows.....	5

## **WHAT ARE YOU GOING TO DO?**

You are going to be constructing a model house, entirely from food!

You'll need to think about and make predictions about which food material will be best for each part of your house design and the differences to the property of a material, in this case a foodstuff, brought on by heat or liquid and how this may improve (or not) it's properties as a building material. Pasta, such as linguine or spaghetti is a useful example:

- Dried before cooking it is straight but brittle
- Cooked and warm it is flexible but has no strength
- Cooked and cooled it will stick together and be more rigid than when first cooked but not as rigid as uncooked.

Your challenge is to make your house from food....

- as tall as possible
- with a footprint that will fit on an A5 sheet of paper (you'll need to research what a buildings footprint is and check the size A5)
- hollow, so you can't just stack up a pile of bread!
- with a door, and at least two windows, so it can't just be a tower

## **YOU WILL NEED:**

Any foodstuffs, the facilities to cook them and knives to cut them. Some good examples to try are

- Spaghetti or linguine: as described in the summary section on the previous page, this can be a very versatile building material
- Root vegetables such as potatoes, swede or carrots: if lightly cooked these can be easily cut into "bricks" or used to stick uncooked pasta into
- Jelly cubes, jelly babies, marshmallows, soft sweets: stack nicely because they are sticky, and can also be used as bricks or to stick uncooked pasta into. Melted marshmallows make excellent glue/cement
- Slices bread or toast: toast makes wonderful walls and windows can be easily cut in
- Playdough: this of course can be made from food stuffs (you'll need to research this)

Another way of looking at this is to consider making cakes, biscuits or even hard tack (you'll need to research that one!) and think about making them into bricks or roof tiles, remember you can use any food stuff in any way you like.

***NOW YOU'RE READY TO GET BUILDING!***

## **CROSS-CURRICULAR LINKS:**

You might think that construction is not part of the curriculum you are studying, well you'd be wrong, these are embedded in construction and in carrying out this activity you will be using your skills in the following topics

**English:** you've read and understood this challenge, you'll have written a plan and notes on what you intend to do

**Maths:** you'll need to calculate how much of each material you are going to use, how tall will your materials make it, what weightings you might use

**Science:** is everywhere, you'll be using your unconscious knowledge of science and engineering throughout this challenge, you'll know that when your structure gets to a certain height it will topple, but can you explain why

**History:** where did the term "footprint" come from, what is "hard tack" and where was it used as a food stuff

**Geography:** where is the tallest building in the world/the UK/Suffolk, were there any topographical difficulties to overcome in that site

**Modern Foreign Languages:** could you write a guide to your construction in a language other than your own or English

**Art, Design and Technology:** you have designed your house, have you considered the aesthetics of it, in the real world a house design would need to meet certain criteria, what might they be

**Music:** have a look at the Sydney Opera House, how does the design of this building create the amazing acoustics that bring it international fame

**Citizenship:** if you have worked as a group to create your structure you will have been practicing your citizenship skills, you will have thought about the different strengths and weaknesses of each team member and recognised that everyone has a meaningful role to play.

**Computing:** could you create a replica of your finished "food house" using Minecraft, could you use a spreadsheet to calculate how many "food bricks" you might use, do you know the software the construction industry work with to manage projects

## **FIND OUT MORE: USEFUL LINKS**

These links of short videos and written resources should help you understand more about this construction challenge

WEB RESOURCE: The national curriculum in England

The entire national curriculum is available to all as a PDF or Word Document

<https://www.gov.uk/government/publications/national-curriculum-in-england-primary-curriculum>

WEB RESOURCE: The Skyscraper Centre

Find out about predictions and motivations in making the tallest building in the world, this resources a great place to start <https://www.skyscrapercenter.com/tallest-in-2020>

WEB RESOURCE: Tallest Packaged Food Tower

Follow this link from the Guinness World Records to find out what they had to consider to break this record <https://www.guinnessworldrecords.com/world-records/578085-tallest-packaged-food-tower>

WEB RESOURCE: STEM Learning - a Tower made from Spaghetti and Marshmallows

<https://www.stem.org.uk/resources/elibrary/resource/34191/spaghetti-towers>



**European Union**  
European  
Social Fund

**W**  
**S**  
**C** | WEST  
SUFFOLK  
COLLEGE

NASCENT



**PLACE 21**  
Connections, Qualifications  
and Character Strengths

This project has been part funded by the European Social Fund.