

EASTER BUSH SCIENCE OUTREACH CENTRE

Get hands-on
with real-life
science

Colourful Chromosomes Researcher Guidance

Learning level	P4-P7/ Families
Research themes	Biological systems: Inheritance
Duration	20 – 45 mins. This activity can be run as a drop-in session or as a lesson.

Colourful Chromosomes overview

In this activity, participants will learn about genes control body systems, and how different genes control your appearance (genotype controls phenotype).

First the students will identify traits that they possess from a table. Then, using colourful beads and pipe cleaners they will build their own chromosomes with the corresponding genotypes.

There will also be a matching activity to reinforce the concepts. Participants will be asked to match finished chromosomes to their classmates.

Learning objectives:

Second Level – Fourth Level (CfE):

Inheritance

- Understand the role of DNA
- Develop an understanding of genetics

Before the activity:

- Familiarise yourself with the materials used in colourful chromosomes. Confirm that there are enough activity sheets for the participants.
- Prepare some information about yourself and your research in the appropriate places and the relevance of this activity to your work.
- Complete the attached template risk assessment and send to the school, the Health & Safety team (ros48@exseed.ed.ac.uk) and the EBSOC team (eb soc@ed.ac.uk)

Activity protocol:

Exercise	Description	Timing	Equipment
Introduction	Introduce yourselves	1min	
What is a genotype	Warm up introduction about what DNA is. Start an interactive conversation. Use appropriate terms depending on audience's level of understanding.	5min	A3 laminate sheets about <i>what is DNA and cell types</i>
Game rules	Explain the activity sheets and give clear instructions. Remind them to be careful with their beads and pipe cleaners.	3 min	Beads, pipe cleaners, activity sheets
Chromosome building activity		10-15 min	Beads, pipe cleaners, activity sheets
Matching activity	As groups of participants finish, place 4-5 chromosomes in the middle of a table and let participants match chromosomes to their classmates.	3-5 min	Finished chromosomes
What did we learn with the game	Reinforce that everyone will have different beads on their chromosomes which is why everyone looks different.	5 min	
What we do at the Roslin institute	Use the opportunity to talk about the Roslin, your research and the research that is done in the labs at	4- 10 min	

Roslin. If there are several researchers, you could set up a networking activity.

Feedback forms

Give the feedback forms

5 min

Feedback forms