

Information for parents and guardians

What to expect from the Junior Scientist event?

We are excited to invite you and your child(ren) to take part in our Junior Scientist event. Previous events were a roaring success, and we are again making this year's one bigger and better! At the Junior Scientist event, you and your child/children will be invited to join us for a fun-filled session of learning about and taking part in science! For children – they will have the chance to take part in lots of fun science themed games, as well as some short (and fun) research studies. There are also some studies that caregivers can participate in. There will be lots of prizes to be won on the day, as well as goodies to take home. For parents/caregivers, you will hopefully be able to relax and enjoy seeing your child taking part in the fantastic activities we have planned.

Refreshments will be provided for parents (tea/coffee & biscuits) and children (juice, fruit & biscuits). And the best part – it is all for free! If you do decide to take part, we will invite you to a 2.5-hour fun-filled session of activities at Collingwood College in August 2026. We will let you know what time to arrive (sessions either start at 10 a.m. or 2 p.m.). Once we check you in, we will have a team of people ready to engage your child in a range of fun activities (e.g., virtual reality games, creative stations; problem-solving games; face painting) and interesting research studies. For every study that your child takes part in (none lasts longer than 20 minutes) they will earn tokens that they can 'spend' on fun activities of their choice. You do not have to stay for the full 2.5 hours if you do not want to.

What to expect from the Junior Scientist Accessible Session

This year for the first time we are running a session specifically for children who have additional needs, for whom the standard sessions would be overwhelming. This session will run at reduced capacity (max capacity of 20 children), meaning it will be much less busy than the standard session. We will have more options and support for regulation compared to the standard session (additional quiet space, additional sensory supports), and we will offer a 'buddy' system for anyone who wants one. This means that if your child would like, they can pair up with one of our volunteers who can accompany them during the session, supporting and engaging with them through the activities. Our volunteers are undergraduate students at the University. They do not have specific training for supporting children with additional needs – they will simply be there to engage your child with the activities we have to offer. Having a buddy at the event is completely optional - we understand that this would not be appealing for everyone. It also does not replace the need for a parent to be present during the session at all times.

The aim is simply to offer a session that is more manageable for children who might find the standard session overwhelming. Everything else about the session is the same as our standard session (details below). In other words, children will have the opportunity

to engage in a range of activities suitable for children of primary school age. Note – they do not have to do all of these. We will be child-led in terms of what they want to engage with at the event. Please do read the activity and study descriptions below to see if these would be something your child would be able to engage with and determine if this session is suitable for them.

Some parents may ask if it is possible for them to bring a sibling of primary school age to this session too, even if they do not have additional needs. The answer is yes – we want this session to be accessible for families.

Junior Scientist Information on Research Studies

This document provides you with information on the studies that we will be running at the Junior Scientist event. Your child will be invited to take part in these depending on their age, and some require a caregiver and a child. Each study will take up to 20 minutes, but many are much shorter. Please read the information on each and complete the consent form which follows. Please note, you do not have to consent to all studies, you can indicate on the consent form if there are particular ones you do not wish you/your child to take part in. Most studies involve tasks that have been designed for children (there is one survey for parents/caregivers only), and children almost always enjoy them and complete them with ease. However, if at any time a child appears unhappy or distressed and does not want to complete a task, it will be stopped immediately. You/they can withdraw from the task at any time and still receive a token. Even if you sign the consent form and your child starts the study, they can still withdraw. Study 10 is for adults only, involving a survey about family time.

Who are the researchers?

The Junior Scientist event is being organised by researchers in the Department of Psychology at Durham University. All the studies are being conducted by academic staff and researchers from Durham University. All the volunteers who are helping out at the event are students from Durham University and have taken safeguarding and outreach training courses. The studies being conducted have ethical approval from the Departments of Psychology Ethics Sub-Committee.

What happens to children's (and guardian's) data?

The results of the studies will be prepared for publication in academic journals. Responses of individual children/guardians will remain strictly confidential, as only group, anonymised data will be reported. If any of the studies include digital recordings, (images, videos, or audio, see section Audio-Visual Recordings for further details), yours/your child's name will never be included with the recording. The University processes your child's personal data in order to carry out research to better understand

child development. Further detail on how the information you and your child provide as part of being involved in the Junior Scientist event can be found on this [Privacy Notice](#). Please note there will be an opportunity to withdraw data should you wish to, following the event, by emailing Professor Mary (mary.hanley@durham.ac.uk) or Dr. Bruce Rawlings (bruce.rawlings@durham.ac.uk).

Can I watch the studies?

You are welcome to accompany your child to watch them take part in the studies, and several include caregivers and children at the same time. We understand that you will be keen for your child to perform as best they can, and so may wish to help your child with some of the games. However, the answers that your child appears to get ‘wrong’ are just as informative to us as those that are ‘correct’. As such, we would be grateful if you did not help your child to complete any of the tasks.

Questionnaires

Understanding your child’s behaviour beyond the tasks that they will do when at the Junior Science event is very important. For that reason, we ask that parents complete some brief questionnaires for us, as parents know best how their children act in different situations. That is why we ask you to please complete the questionnaires that follow this information sheet and consent form. These are very brief and should take you no longer than 5 or so minutes to complete. We will ask some general questions about your child and some demographic information about you. In addition, you will be given the opportunity to complete some questionnaires at the event, depending on the studies your child takes part in. The questionnaires are optional, and your child can take part even if you don’t fill them in. You can also skip any questions that you don’t wish to answer without providing any reason. The data collected in the questionnaires will be anonymised, stored securely, and used with the study results as group data. Answers from individual parents/guardians will remain strictly confidential. The questionnaires are for research purposes only – we cannot give individual feedback.

Audio-Visual Recordings

Please note that in some studies (study numbers 1, 2, 11) we will take audio and/or video recordings of the session so that we can study particular behaviours later on. These recordings will be stored securely, and they will not be shared with anybody other than the research team unless you give written permission. They will be stored in password protected repositories within the University, accessible only by members of the research team. A summary of how we will process this data is given below:

Purpose: To provide detailed analysis of the behaviours under study to enable the research team to answer specific research questions

Use: Recordings will be re-played and analysed by the researchers after the Junior Scientist event. Some may be used in conferences and other educational presentations, however, this will only be with your explicit permission (that you can provide on the accompanying consent form).

Storage: All recordings will be held securely on our University servers. Copies held on temporary storage (e.g., cameras, laptops, removable storage devices) will be deleted as soon as the data can be moved to secure University servers.

Retention: Recordings will be kept for at most 5 years after the findings have been published. After that time, they will be deleted unless you have given permission for them to be used further (see consent form).

Anonymisation: All data collected at the Junior Scientist event will be linked with an anonymous code, which is unique to each child. Researchers may use this number to label their data files, but they will not have or use your child's name – only the organising team have access to your personal information. During visual recordings, where possible, researchers will minimise the possibility of your child being identified, by for example, positioning cameras behind the child. What are the benefits to taking part? The most important benefit will be for your child – we hope that they have fun time engaging in lots of activities that they enjoy and learning new things. We hope that you in turn benefit from this opportunity for free activities for your child during school holidays. We will also be able to provide your child with a certificate and goodies for taking part. Further queries? If you have any questions or queries about the Junior Scientist event, or any of the studies that we plan to run, please contact the organisers Prof. Mary Hanley mary.hanley@durham.ac.uk and/or Dr Bruce Rawlings bruce.rawlings@durham.ac.uk

Study information

Study 1

Linda Arrighi

Household roles and children's maths and reading outcomes

Background: Maths and reading are essential life skills. Research evidence has shown that children are not all equally as confident or do as well in these two key skills. In this study, we aim to investigate the role that the home environment plays when thinking about maths and reading outcomes, such as children's confidence and achievement in these subjects.

Ages: 6-11

What would my child be doing? Your child will be asked to solve simple additions and subtractions with a time limit, as well as read words aloud. Using a smiley face scale,

they will be asked how nervous they felt completing these tasks and how nervous they feel generally in situations that involve maths and reading. Overall, this should not take more than 10-12 minutes.

What would I as the parent/caregiver be doing? As we are interested in the family environment, we will need some direct input from you as well at the event, with a series of questions about you (for example, income, education, occupation, how chores are organised in your home) and your child (specifically around their anxiety). Overall, this should not take more than 10-12 minutes.

What data would be collected: Researchers will record your child's performance in the maths and reading tasks (how many additions/subtractions/words solved or read correctly) as well as which smiley faces they pointed to when asked questions such as "how do you feel during a math test?" For the reading aloud task, audio recordings will be collected to double-check scores after the event. All data will be stored securely and anonymously (anonymous codes will be used). Researchers will also record your answers to the parent/caregiver-focused questions.

Study 2

Linying Pei (Research assistants: Ankita Basu, and Madeline Regan)

How do cultural context, parenting, and urbanicity shape adults' evaluations of imitation and innovation and children's behaviours

Background: Humans learn from others through imitation, but sometimes people copy causally irrelevant actions (over-imitation) rather than developing their own solutions (innovation). These behaviors play a crucial role in cultural learning, the transmission of knowledge, and children's learning strategies. This study examines how adults evaluate children's over-imitation and innovation behavior, and whether these evaluations predict children's learning strategies and innovation.

Ages: Children aged 4-11 years old. Adults aged 18-80 years old.

What would children be doing? Children will take part in a series of short, fun problem-solving activities. These include simple tool innovation tasks, such as trying to retrieve a sticker from a tube using different materials, and puzzle-box tasks involving different ways of solving a problem. Children also watch short videos showing different ways that other children solve problems (for example, copying every step or using a more efficient solution) before trying the task themselves.

Children's behavioral tasks will be video recorded to allow researchers to later code and analyze children's problem-solving strategies, imitation, selective copying, and innovation behavior. The activities are designed to be engaging, age-appropriate, and enjoyable.

What would parents be doing? Parents or caregivers may be asked to complete a questionnaire about demographic background, cultural values, and to evaluate children's learning strategies and behavior.

What data will be collected?

Researchers will collect:

- children's behavioral responses during the tasks (e.g., problem-solving strategies, imitation, selective copying, and innovation);
- And video recordings of children's task performance for later behavioral coding and analysis;
- questionnaire responses from adult participants;

Video data will be transferred from the recording device to the university server as soon as possible. Before transferring, the recording device will be stored in a secure location accessible only to the immediate research team. Once transferred to the university server, only members of the research team will have access to these video recordings. Video recordings will not be shared outside the research team and will be used solely for research purposes. All data will be stored securely, and participants will be identified only through anonymous participant ID codes.

Study 3

Paddy Ross

Recognising Different Emotions from Bodies and Voices

Background

There is evidence that given a mismatch of visual and auditory information, children tend to rely on what they hear, whereas adults tend to rely on what they see. This phenomenon extends to emotion recognition with adults and children coming to different conclusions regarding how someone is feeling if the visual and auditory information doesn't match (e.g. seeing a fearful body movement but hearing a happy laugh). Here we will run a study to attempt to understand the mechanisms behind this effect.

Ages: 5-11

What would my child be doing?

Your child will see short 2-second videos of people acting in a happy, sad, angry or scared way. At the same time, they will also hear short auditory bursts of the same emotions. Sometimes these will match and sometimes not. Your child will simply be asked how they think the person is feeling. There are no wrong answers.

What data would be collected

We will be collecting response data only, no personal information aside from age and gender will be taken.

Study 4

Zanna Clay (study title):

Study 5

Jaclyn Ferraro

The Detective Series: Operation Dot Hunt

Background: This dot counting task is simple task done to examine vision and attention. Children will be giving the role of 'Detective', and their mission is to find all the dots in each scene and report them to the Police Captain (the researcher). The dots will be viewed in an array on a computer screen, the child will be asked to count the dots and report the total, either verbally or via keyboard input. The number and arrangement of dots will vary across trials and there will be 30 trails in total.

Ages: 4 -11

Duration: 5 –10 minutes

What would my child be doing? This is a simple task where your child will count the dots they see and verbally tell the research how many dots, they see (if older, they can manually put in the answers themselves.)

What data would be collected? The data collected will be your child's age, gender, presence of complications at birth, ophthalmological conditions, neurodevelopmental conditions, eye tracking data & their responses to the 'Operation Dot Hunt ' task looking two outcome measures: accuracy (correct number of dots reported) and reaction time (time taken to respond).

Study 6

Lauryn Clucas/Giulia D'Avino

The Effects of Gesture and Tiredness on Word Learning:

Background: Learning words is an important task, as developing a vocabulary is important for many areas of development, such as reading and writing. Two key factors that influence vocabulary development are gesture and tiredness. For example, gestures help with word learning during infancy, and they also support learning in school-aged children, however, we don't know how they do this. Also, sleep has an important role in consolidating language, but the role of tiredness in this is not understood. Therefore, in this study we aim to further understand the effects of these two influential factors.

Ages: 4-11

What would I be doing: Before your child takes part in the task, you will be asked to complete a questionnaire about their tiredness, which should take around 5 minutes.

What would my child be doing? Your child will take part in a tablet-based task where they will be shown videos of an adult gesturing to novel objects and labelling them with novel words. After watching the videos, they will take part in a task where they are shown all of the objects and asked to select the one that matches the label.

What data would be collected: Researchers will record whether participants selected the correct objects, as well as the responses to the tiredness questionnaire

Study 7

Lynda Boothroyd

Choosing faces and objects

Background: Children like to copy others' behaviours and choices. Children and adults use others' opinions to help them decide if another person is a good 'social partner'. Researchers currently disagree whether this kind of social 'popularity' bias is the same process as other kinds of copying. This study will therefore investigate whether children use 'social information' (the implied opinion of another child) the same way when choosing between people (pictures of faces), real objects, or random shape images.

Ages: 4-11

What would I be doing: While your child completes the choice task below, you will have the opportunity to complete a questionnaire on their social behaviours, which should take around 5 minutes. The questionnaire we use can sometimes be used while screening children for developmental differences such as autism; however it is not a diagnostic tool and we are only using it to understand the individual differences in social behaviour amongst the children in the study.

What would my child be doing? Your child will be shown a series of pairs of faces, everyday objects and random shapes on a computer screen and asked which they prefer. Sometimes they will just see two similar items, sometimes there will be a third image of a child smiling or frowning at one of the items.

What data would be collected: Researchers will record which face/object/shape your child prefers out of each pair.

Study 8

Rita Sepulveda/Bruce Rawlings

The cognitive underpinnings of tool innovation

Background: We humans are 'the great tool users in the animal kingdom'. No other animal makes or uses tools with the diversity and complexity of humans. Yet, children

find making simple tools remarkably hard - they struggle to make tools that crows or apes can. In this study, we want to examine what types of cognitive processes help children make tools.

Ages: 4-8

What would my child be doing? Your child will be asked to make a tool to solve a simple problem. They will also try and think of solutions first, to see if this helps them.

What data would be collected: Researchers will record whether children make an appropriate tool.

Study 9

Amy Pearson, Monique Botha, and Shiyang Chen

Who am I, and what can I do?

Background: Children start to develop an understanding of who they are in childhood, learning about their own values and preferences, but also the values and preferences of others. Some children find it easier to be themselves, and some children find it harder. We are interested in whether this is different among neurotypical children and neurodivergent children. We are also interested in the kinds of labels children choose to describe themselves, how they judge what kinds of labels are good and bad, and whether their ability to be themselves changes across different environments, like school, home, and social settings (e.g. after-school clubs).

Ages: 4-11

What would my child be doing? Your child will be given some words (e.g. words like 'honest', 'kind', 'funny') and pictures (e.g. riding a bike). They will be asked to a) sort these into 'good' and 'bad' piles, and b) choose the words and pictures that best describe themselves. We will also ask children about whether what they are like at home, is different to what they are like when at school.

What data would be collected: We will record a) which words/pictures your child labels as 'good', and 'bad', b) which words/pictures your child chooses to describe themselves, and c) the difference between what they are like at home and school

Study 10

Stefania Paolini (When Seniors and Young People Meet in Your Family (caregivers only))

Background: In many Western countries, children and young adults have limited contact with older adults and the older adults they have most contact with are often

their grandparents. Their parents/guardians sometimes play a key role in facilitating contact between their children (even when young adults) and the older generation. In this study, we are interested in the experience and perspectives of parents/guardians around intergenerational encounters between their children (young or older) and senior people (in the family/outside).

Ages: Parents and guardians of young children and/or young adults

What would I be doing? Whilst your child/the children you are looking after today are doing a study or activity, you will fill out a 10-minute questionnaire asking about your experience of intergenerational contact (in your family/outside).

What data would be collected: Researchers will ask very simple questions about your perceptions, feelings, impressions of intergenerational contacts. You will provide your responses either choosing response options that best describe your views among alternatives or writing down short open-ended descriptions of your views.

Study 11

Charlotte Wilks

Children as innovators: Comparing performance on three tool innovation tasks

Background: Humans are extremely innovative – we have developed complex tools and technologies that enable us to delve deep into the human mind, make beautiful music, and travel into space. However, we still don't understand the (cognitive) abilities that enable us to be so innovative. We think these abilities develop during childhood, but our current understanding is based on a relatively small number of different tool innovation experiments which may not measure the same abilities. In this study, we will compare children's performance on three different tool innovation tasks which will be presented in the form of fun challenges.

Ages: 5-11

What would my child be doing? Your child will be asked to use a variety of child-friendly materials (e.g., straws, sticky tape, various containers) to make tools to solve three different challenges.

What data would be collected: Researchers will record whether children make appropriate tools, the steps they take, and the materials they use.

Study 12

Jamie Moffatt / Niklas Ihssen

Chasing Likes: the role of social rewards in social media use

Background: The government have recently proposed a ban on access to social media for children under 16 years. This is because children and young people increasingly spend a great deal of time using social media apps like TikTok, Instagram and Snapchat, and there are concerns about the associated harms. However, there is much we do not yet know about the impact of social media, or the likely impact of the proposed ban. For instance, social media provide avenues to seek and receive social rewards such as acceptance from others. Childhood and early teenage years represent a time of increased sensitivity to approval and acceptance from peers. In this study, and in our broader Chasing Likes project, we are investigating how children process social rewards to better understand their drive to use social media.

Here we are testing out 2 tasks designed to measure how children seek and respond to social rewards. We also have a brief survey for parents to investigate social media use in this age group.

Ages: 8-11

What would my child be doing?

We will first attach wrist and fingertip sensors to your child and then ask them to complete 1 or 2 simple tasks, each lasting just no more than 10 minutes. The sensors will record how fast their heart is beating, and how sweaty their skin is during each task, which are important body signals which can tell us how engaged they are in the tasks. Each task will tell us something about how your child responds to social rewards:

1) In the first task, your child be asked to press a button as fast as they can after they see a shape. Each shape will be followed by a happy or neutral facial expressions.

2) In the second task, your child will watch several brief videos, some containing social scenes (e.g. people working together) and some with non-social scenes (e.g. puzzles falling into place). A camera attached to the laptop will record where your child is looking during each video. Afterwards we will ask them to rate how engaging they found each video.

What would I be doing:

You are welcome to watch and ask questions while your child is completing the tasks. You may also complete a brief survey which asks about your child's social media use, your plans to allow or restrict their access to social media, and whether you would be interested in taking part in our future research.

What data would be collected:

This study will record your child's speed at responding to visual shapes, their emotional ratings of social and non-social videos, and where they look while watching social and non-social videos.

The study also records several types of physiological data as they complete the tasks, including their heart rate, skin conductance (how sweaty the skin is) and pupil dilation (the size of their pupils).

If you fill out the survey, we will also record your responses to the survey questions.

Study 13

Pattern puzzles: reasoning and problem-solving
Junior Scientists team

Background: Alongside the individual research studies, we collect a general measure of reasoning and problem-solving as part of the event setup. This involves a short pattern puzzle task and helps us understand how children approach problems in general, which supports the broader aims of the research day.

Ages: 4-11

What would my child be doing?

Your child will be shown a series of visual patterns, such grids in which one piece is missing, and asked to choose which option from a set of pictures best completes the pattern. The patterns gradually become more challenging. There are no words or numbers involved, and no prior knowledge is needed. Children simply look at the patterns and pick what comes next. This should take around 10 minutes.

What data would be collected:

Researchers will record your child's responses (which picture they selected for each pattern) and whether those responses were correct. No personal information beyond age will be collected. All data will be stored securely and identified only by an anonymous participant code.