

Science for Families

Fostering family engagements in STEM education



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A point for debate...

“Engaging parents in a child’s school life is a waste of time. It’s time consuming, hardly ever works, and the parents are difficult to work with. Leave the teachers to teach, that’s what I say!”

A. Teacher

The barriers to parental engagement

Why might a parent
not engage with their
child's education?



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Work commitments

Lack of childcare

Time commitments

Fear of school / education

Don't see it as important.

Poor relationship with school / teachers

The benefits of parental engagement

Student achievement is not only based on good schools and good teaching; family background and home support play an important role in education.

Parental engagement has been proven to increase a child's educational attainment.

Parental engagement improves relationship between schools, parents and the wider community.

Parental engagement improves parents self efficacy and understanding of the curriculum.

Parental attitude towards science has a positive effect on a child's science attainment.

Ways and means of parental engagement

Has your school used any of the following methods?

School fayres
Parent Teachers Association
Newsletters
Letters home
Social media
Website
Local press
Afterschool clubs (for families)
Sports Days
Curriculum events
School plays
Focus groups
Parents evenings
School disco
Fundraising
School trip volunteers
Classroom assistants
Helping with reading
Adult education classes
Parenting courses

Did they work? Did they work well? How did you measure success? Did you do them again?

Overcoming the barriers

Look back at our list of barriers

For each barrier suggest three ways which you might overcome it:

- 1.
- 2.
- 3.

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Lack of childcare

Time commitments

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Don't see it as important.

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Overcoming the barriers

Parents are more likely to be involved if:

- They see involvement as part of the 'job' of being a parent (make it the norm)
- They feel they have the capacity to contribute (explain to them why they are needed)
- It is part of a two-way relationship fostered by the school.
- They believe that they 'matter'.

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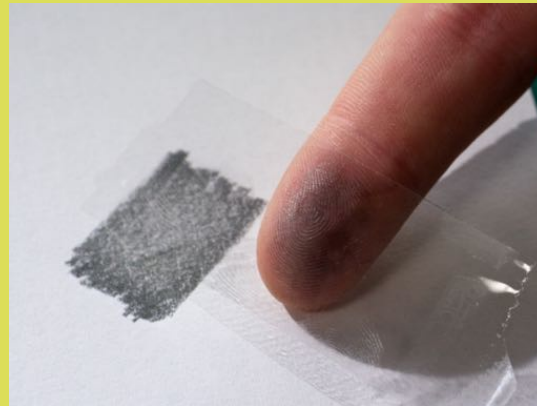
Things to be aware of:

- Engagements don't work if they are just a 'bolt-on' – they need to be a central priority of science within the school.
- Schools need to be flexible in terms of staffing and time. Schools should work with the parents.
- Engagements need to feel safe.
- Parents talk – for good and for bad!

Think Physics: Science for Families

Think Physics is running a family engagement called 'Science for Families'.

Science for Families is a 5 week parent and child after school science club. It aims to empower parents to participate in science with their child at home. We use simple activities, made from cheap materials (which can be found in the kitchen), to demonstrate scientific principles that children are learning about in school.



Activity 2.1

Fingerprints

You will need:

A pencil, some clear sticky tape, a piece of plain paper, your finger.

Step 1

Heavily shade a 2cm x 2cm square on the paper using the pencil.



Step 2

Place the end of a finger on the shaded patch and move it around to cover your finger end with pencil lead.



Step 3

Carefully place a piece of clear sticky tape onto the end of your finger (sticky side onto the finger). Then stick the tape to the plain paper and look closely at your fingerprint. Repeat using your other fingers.



Adult supervision

Make sure that you wash your hands thoroughly after completing the activity.

The BIG questions

Can you work as a family to answer these BIG questions?

- Compare your fingerprints, do you notice any patterns?
- Do you have toe prints? (There's only one way to find out!)
- Why do you think we have fingerprints?
- Your fingerprints are unique. Why might this be useful?
- Why do think the police take fingerprints?

Compare your prints with these four common types of fingerprint:

Loop



Whorl



Tented Arch



Arch



The very best (and most difficult) types of family engagement



Evidence suggests that the types of parental engagement that have the most impact on pupil attainment happen inside the home. They are the best, but most difficult to foster.

Your next family engagement

To end this session, I'd like you to begin planning your next family engagement.



A few rules?!

Your engagement must be new, i.e. not something you do every year!

Keep it realistic.

Ensure that it has an impact.

Think about how it will continue after it happens.

Pick a target group of parents you want to reach.

Resources and useful links:

UK Government Review of Best Practice in Parental Engagement -

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/182508/DFE-RR156.pdf

Top Tips for Engaging Parents -

<http://www.theguardian.com/teacher-network/2015/jun/28/top-tips-for-teachers-on-engaging-parents-in-learning>

Find this presentation and more resources at:

thinkphysics.org/pstt2016

Or get in touch:

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