

# Little Bang

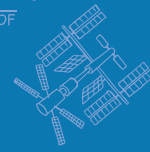
# and Bright Sparks

newsletter

SPRING 2017



Children's  
Discovery  
Museum



## In This Edition

page 2: LBDPlus now available!

page 2: Carmen Spears

page 3: Little Bang - The Festival  
edition

page 3: CDM Big Bang Science  
Club

page 4: Phone Polls and letters

page 5: Tips for Exploring  
Science with Children

page 6: FEATURED WORKSHOP:  
illuminated Geometry

page 6: Slime recipe

## Welcome

Welcome to the second **Children's Discovery Little Bang Discovery Club** newsletter. We hope to keep you all engaged in our 'community of best practice' by sharing news and stories on how Little Bang is running in your service centre and beyond.

In this issue we showcase some hands-on activities and let you know about the new 8-week extension program, **Little Bang Discovery Club PLUS**.

We also highlight news and research that supports out-of-school learning and the important role of libraries. For those services thinking about expanding science club opportunities to older children, we explain how you can buy

tested workshops, or engage local contractors.

We also now have an active Facebook site [www.facebook.com/childrensdiscovery/](http://www.facebook.com/childrensdiscovery/) that we hope you will connect with and share your successes.

Lastly, we will be conducting our annual telephone poll, calling each service for a 10 minute Q & A to gather the evidence of impact, that will help shape future directions and improve funding opportunities.

Best wishes,

*Adam*

Creative Director  
Children's Discovery Museum



## STEAM INTO LIBRARIES

Back in March the STEAM into Sydney conference heard about some excellent science initiatives being staged in libraries. For those who missed it or would like a refresh, the talks have now been loaded onto the ALIA [YouTube Channel](#), while the PowerPoint presentations accompany the written papers on ALIA's [web page](#).



[www.facebook.com/childrensdiscovery/](http://www.facebook.com/childrensdiscovery/)  
**PLEASE LIKE US!** We'd love to share your stories of science in the library! Some of our resources are also available for sale from [here](#). We now take credit card to make it easier to quickly buy the resources you need.



LBD Plus  
now  
available!

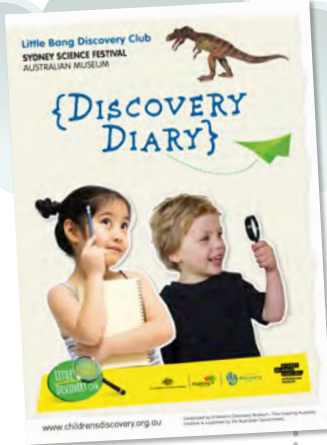


## Little Bang Discovery Plus

is for children aged between 4 and 6 years who, together with their accompanying adult, have completed the four-session Little Bang Discovery Club course.

This eight-week\* program will extend the skills already learnt and contain more fun @home experiments to try. Everyone in the family will quickly see just how much they are surrounded by science, and how every simple observation can open up a whole lot more questions!

Each child is issued with a **Little Bang Discovery Diary** to make notes, draw, add photos, describe their @ home experiments, record data and their explanations – with age-appropriate expectations.



## Course structure

### Session 1

- Introduction and review the concepts of LBDC while exploring the Discovery Plus Box.
- Learn and practice a new skill e.g. how to pour water accurately into a measuring cylinder.
- Apply the new skill in an experiment - practice experiment set-up, what to look for and what to record in the Discovery Diary.

### Sessions 2-7\*

(\*choose to offer fewer, or more sessions)

- Report and review experiments conducted at home.
- Learn and practice a new scientific skill while exploring a science topic.
- Apply the new skill in an experiment, preparation for a home experiment.

### Final Session

- Report and review experiments conducted at home.
- Review past weeks; participants should be better at observing their environment, identifying patterns in their experimental results, asking questions that can be answered experimentally or looking up reliable sources of information from the library collection or the Internet.
- Graduation and finale.

## HOST LIBRARY REQUIREMENTS

- Meeting room with access to water, good lighting, access to tables and chairs (recommended), access to brooms, waste-bins, sinks etc.
- Library collection display related to weeks' theme (books, DVDs, Spark!Boxes, etc.)

## Introducing CARMEN SPEARS

For Melbourne-based libraries, we are delighted to introduce **Carmen Spears** who is available to assist in running **Little Bang Discovery Club** and **Big Bang** programs in your service.

Carmen is an enthusiastic science communicator and enjoys helping children to build confidence in their own natural skills of inquiry. Carmen currently runs science workshops for primary and preschool children through her incursion business. She holds a bachelor degree in social science and has three inquisitive children of her own.

Carmen will be available from Term 4 2017

Contact Carmen on 0409 962 593 or [carmen@carmenspears.com](mailto:carmen@carmenspears.com)



## Little Bang - the Festival Edition

### We love SCIENCE FESTIVALS!

We created the **Little Bang Discovery Club – Festival Edition** so that we could participate in National Science Week's many festivals. Our first outing was the **Super Science Saturday** at the Australian Museum, a major venue for the Sydney Science Festival.

We occupied the typical library-sized space with tables to do the collecting and sorting activity, another table for measuring, then several tables scattered around of Table-top experiments.

A specially created **Discovery Diary** was issued to all participants.

As always, we observed and have made some improvements for next time.

*If you would like to know more, please send us an email and we'll give you access to our latest ideas and materials.*

We also adapted Little Bang to suit a more energetic audience – being part of the inaugural Innovation Games at Sydney Olympic Park. Check it out!



## CDM Big Bang Science Club sets

### Science club activities for older children

Some of you have expressed interest in science club activities for older children (our in-house term is **Big Bang Science Club**). We are in the process of making sets of these workshops available for purchase, complete with lesson plans / scripts, facilitator notes, equipment lists etc.

You can view our current list at <https://www.childrensdiscovery.org.au/images/worksheets/PrimaryPrograms2017.pdf>

Please send us an email or go via Facebook if you would like to know more.



**To our Sydney libraries - We are happy to travel to you to run these workshops as part of your science club.**



## Telephone Poll in early September / October

### 15 min to help us learn

Thank you in advance for taking the time (about 15 minutes) to answer some questions in our annual poll.

The types of questions we will ask:

- The number of your staff involved in running **Little Bang**
- Any fees you pay others to run the club, or charges you ask participants to pay
- Any testimonials or other noteworthy participant feedback
- Any promotional materials you created for **Little Bang**, or other social media impact
- Any other science-focussed events and services you have tried
- Your ideas for improving the Club
- A few more questions for libraries with **Spark! Discovery Boxes**
- Any partnerships with external partners, as facilitators, grants or in-kind support.

We will email you first to book in a convenient time to call. We hope this will give you enough time to prepare, possibly review your feedback and check your files!

We are happy to share general information to the network (please let us know if anything is confidential during the interview).

**THANK YOU!**



## We love Letters!



Hi Wendy,

We had a hugely successful Little Bang Discovery Club last term at the Cummins Library, so successful that we are running another one this term, and have a waiting list of people wanting to join! It's pretty amazing for a small community like ours, and we are so happy about not just the interest in Little Bang, but the conversations that are now taking place and being promoted within our younger patrons. That was a main part of our feedback, that the simple ideas stimulated great conversations and ideas at home for the families that participated.

Many, many thanks for making this opportunity available! It really is such a fantastic program.

It was so exciting, that I did experiments with colouring roses and lilies during the school holidays

(quite incredible)...and today before Baby Bounce, we did a quick M and M's and water experiment, which produced a fantastic rainbow effect. - Once again, many, many thanks.

Cummins School Community Library



Hi Wendy,

The Junior Science Club is such a huge success and the feedback from the parents is amazing. The Little Bang Discovery Club and The Young Investigators Club are booked out and we have many parents asking us whether we are planning to deliver them next term.

Hornsby Library

## Hello Adelaide

We are heading back to complete **Little Bang** training over the next couple of months (see dates and locations below). Places are filling fast, so get in now to avoid disappointment! Adelaide training dates:

**Burnside Library Service** - Tuesday 12 Sept

**Woodcroft Library** - Thursday 14 Sept

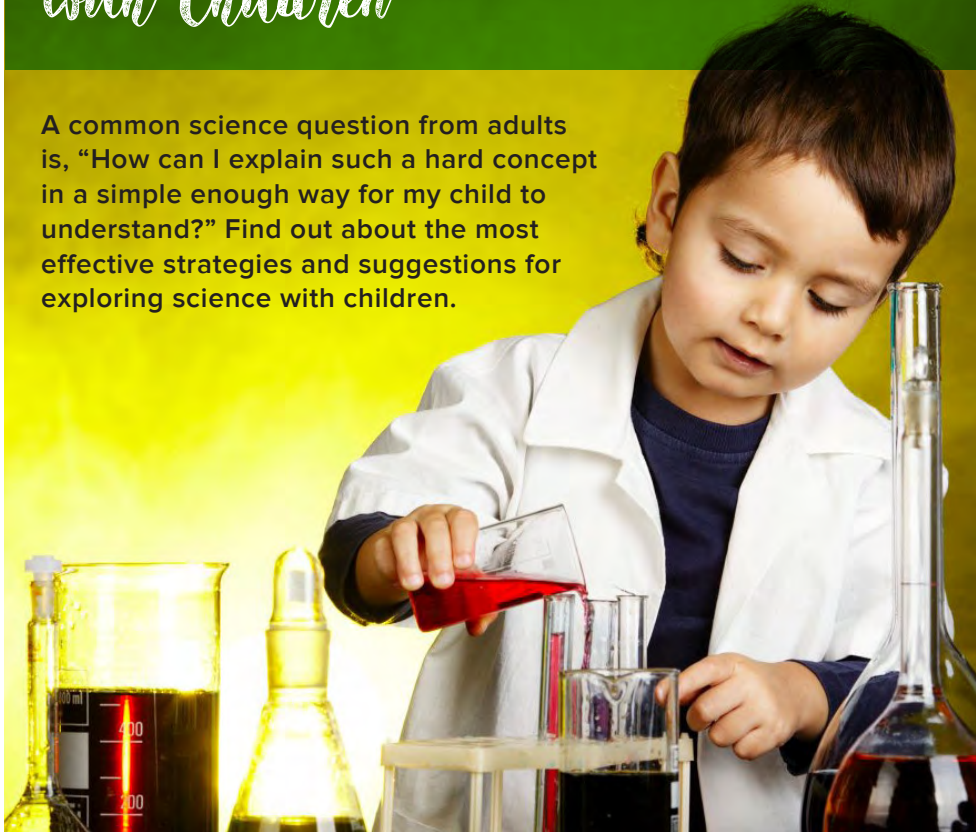
**Salisbury Library Service** - Wednesday 18 Oct

**Barossa Libraries at Nuriootpa Library** - Friday 20 Oct

Adam will also be speaking at the **ALS Public Libraries conference** on 19 September [conference.plsa.org.au](http://conference.plsa.org.au)

## Tips for Exploring Science with Children

A common science question from adults is, "How can I explain such a hard concept in a simple enough way for my child to understand?" Find out about the most effective strategies and suggestions for exploring science with children.



### Enjoy science with your child

Here are a few points to keep in mind as you enjoy science alongside your child:

- You don't need to have answers for all of your child's questions! Encourage your child to develop his own science thinking skills.
- Listen carefully to your child. Engage her in conversation about what she thinks, and encourage her to explain why she thinks as she does by asking questions such as, "Why do you think the snail is eating that leaf?"
- Don't immediately correct your child. If your child says something scientifically incorrect, help her discover for herself what is correct rather than correcting her. For example, if she says "heavy things sink, you can ask her, "Which heavy things have you seen sink?" Or, "I wonder if we can find something heavy that can float?"
- Model curiosity. Wonder aloud: "I wonder what will happen to this pudding mix when we put the water in?"
- Children develop at different rates. Keep this in mind as you do science activities with your child. The activities suggested for various ages are intended to be followed generally, not strictly. Children develop at different rates, so not all will fit neatly into a specific age category.

### Explanations do not always help

Explanations, even simple ones, do not always help children (or adults, for that matter!) understand complex ideas. So what has a parent to do? The simple answer is to worry less about explaining to your child, and spend more time modelling the fun of science: going on walks, mixing things, testing to see what will happen, observing carefully and wondering along with your child.

### Science is about trying to make sense of the world

Science is not simply about knowing information—it is equally a way of trying to make sense of the world.

Scientists must ask questions, design investigations, try to make sense of the information they have gathered during the investigations, and communicate and defend their thinking to others. They don't always find the answers to their questions, and they don't always agree.

### Help children think like scientists

It is much more important for parents to help children develop the skills they need to think like scientists, than to help them understand complex scientific concepts. Even the youngest children are quite capable of beginning to build these skills.

## FEATURED WORKSHOP

### Illuminated Geometry

Platonic solids can be created from paper and lit from within will make them glow gently in low light. When many of these lanterns of different sizes and colours are put together, they create a magical landscape.

Making geometric lanterns is an exciting workshop. It simply requires circles of paper cut all to the same size (our set are all 100mm), which are then folded over cardboard templates of various shapes (square, triangle, pentagram, etc). The folded circles are then glued together to make a tetrahedron, cube, octahedron, dodecahedron or icosahedron. You can then choose to illuminate your creation with an LED light, hang it up and enjoy!

The beauty of this workshop is that it can be adjusted to suit all levels of ability. Some people might enjoy simply making the shapes and learning in an experiential way. For others more interested in geometry, maths or engineering, it can be used as a way to explore the principles of geometry in detail.

Lanterns can also be made from all sorts of paper including: recycled envelopes, tissue paper, tracing paper, washi paper, old wrapping paper and photocopy paper. Once the lanterns are lit, a wonderful effect is achieved by the light passing through the different thicknesses and colours of the papers. The paper is thicker where the paper circles are stuck together and light leaks out from the vertices, creating a pattern of light and dark within each lantern.

Platonic solids are 3D shapes where each face is the same regular polygon and the same number of polygons meet at each vertex (or corner). There are five Platonic solids. A tetrahedron has four sides that are equilateral triangles. A cube has six square sides. An octahedron has eight sides which are equilateral triangles. A dodecahedron has twelve sides that are pentagons and an icosahedron has twenty sides that are equilateral triangles. A regular polygon is a 2D shape where all the internal angles are equal and all the sides are of equal length. For example a square, an equilateral triangle, a pentagon or a hexagon.

These solid shapes have been known since ancient times and were described in some detail by Pythagorus, Theatetus, and Euclid. Plato assigned each shape to one of the four classical elements. The cube represented Earth, the octahedron air, the icosahedron water and the tetrahedron fire. But what of the dodecahedron? Plato said it "was used by the god for arranging the constellations in the whole heaven".



[https://youtu.be/JYT\\_nQgkXs4](https://youtu.be/JYT_nQgkXs4)

Image by Jenny Dockett



Contact us if you would like to know more, or to purchase a workshop kit.

6



## Little Bang Discovery Club

### TRAINING VIDEOS

**Session 1 Collecting & Classifying:**  
<https://youtu.be/1QBo5xy6TWI>

**Session 2 Measuring & Recording:**  
<https://youtu.be/uDqy8LThaqc>

**Session 3 Experimenting:**  
<https://youtu.be/4R0f3LJCZB4>

**Session 4 Science Fair:**  
<https://youtu.be/JfvPKSrbftc>

Attended Little Bang training?  
Need a certificate? [Contact us.](#)



### Slime Recipe

1. Pour ½ cup of water into a cup.
2. Colour your slime by adding a drop of food colouring to the water.
3. Use a ziplock bag and put it inside another cup for support.
4. Pour the coloured water into the ziplock bag.
5. Measure a level teaspoon of guar gum and sprinkle it on top of the water. Mix well using a pop stick.
6. Add 10 ml of glycerine. Mix well.
7. Add 5 ml of borax solution (made with 1 teaspoon borax dissolved in ¼ cup warm water).
8. Stir and the mixture turns into a "SLIME".

Adapted from the Powerhouse Museum  
(c) 2012 - 2017