



Developing and practising astronomy curricula for 5-6 Children

—To explore how to develop a series of astronomy curricula suitable for 5-6 Chinese children, we conducted a year-long school-based astronomy curriculum development and practice in a public kindergarten in Sichuan.

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Motivation and Inspiration

★ Why do we advocate introducing astronomy from kindergarten?

- With the rapid development of education quality in China, people pay attention to quality-oriented education, and society significantly demands astronomy enlightenment. However, due to the lack of astronomy background teachers for children, there is a general lack of astronomy courses for kids.

★ How do we do astronomy initiation ?

- We adopt international teaching methods, including STEAM, Hands-on, and PBL.
- Interdisciplinarity

★ What have we done for the kids, kindergarten, and teachers?

For kids	textbook	Activity instruction	Activity package
For teacher	presentation	Teacher guide book	Teacher training





Course case—The Eight Planets

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Each week has a 40-60 minutes astronomy lesson. (60% of the time is activity content in each class with 15 minutes teacher presentation)								
Course name	Hiding and seeking! Mercury	Making-up! Venus	Breathing! Earth	Tornadoes! Mars	Marble chocolate! Jupiter	Hula hoop! Saturn	Good night! Uranus	Howling wind! Neptune
Activity name	Blowing the Mercury	Heating the Venus	Rounding the Earth	Find water remains on Mars	Fluffy Jupiter	Scaling the Saturn ring	Dumping Uranus	Cooling Neptune

Developed **18** series of courses

Created **50** activities

Taught **1000** kids



Activity system & Results



Going to the nearby outdoor parks, **planetariums**, astronomy museums, portable inflatable planetarium domes, etc.



Let children **draw down their imagination** about the planets, galaxies, exoplanets, etc.



Let kids learn about the planet's surface features, axial tilt, revolution, evolution through a series of **interactive games**.



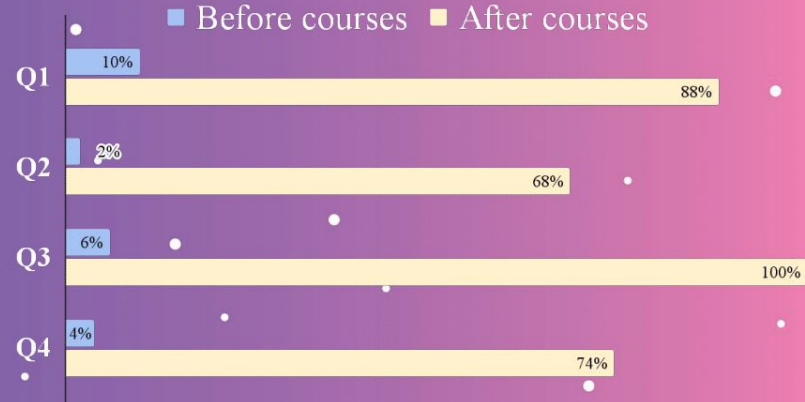
Through catch songs, kids can easy to remember some fundamental knowledge.



Reading astronomy picture books **with** children.

cognitive level improved by 70%

A survey of children's astronomical cognition **before** and **after** *the eight planets* courses



Q1: Can you say the names of eight planets?

Q2: Moon of Mercury, which bigger?

Q3: Can the Saturn sink down if you have a big pool?

Q4: How many moons does Mars have?



Team training

Dr Li and Dr Yan instruct our group, and we develop a training system.

Grades	group/class name	Reference resource	Goal
First-year	Regular University Courses (Introduction to Astronomy)	<i>Astronomy Today (Book)</i>	Let new members know basic astronomy knowledge
	Translation group	<i>ESO cast, Hubble cast, ESO Planetarium video, LSST workshop, Shaw workshop video and proceedings record, etc.</i>	Let members know about the cute edge of astronomy. They are improving their English skills and accumulating a glossary of astronomical terms.
	<i>Laser Guide Star</i> training group	ESO cast	This group focus on improving new members' presentation skills and astronomy outreach ability.
	Astronomy & Activity club (AAC)	Paper model, low-cost handicraft, astronomy lab activities	This group focus on inspiring team members' astronomy creativity through diversified activities.
Second year	Practice	Shanghai Astronomy Museum, Sichuan Science and Technology Museum, Five-hundred-meter Aperture Spherical Radio Telescope, etc.	An out-school trial always lasts 1-3 months; the primary purpose is to let group members have an actual outreach experiment.
	Contest	World Wide Telescope (WWT), Chinese undergraduate Astronomical Innovation Contest (CAIC)	To have a deeper understanding and reflection on astronomical science education.