

# In the know

By Ken Cheung

Special to Southwest Parent

As parents, we know that reading and writing (literacy), and counting (numeracy) — especially counting our dollars and cents — are important life skills.

Now terms like “cloning,” “DNA,” “evolution,” “gene therapy,” “molecules,” “nanotechnology,” “RNA,” “semiconductor,” “superconductor” have become parts of our vocabulary.

The scientific concepts behind these terms will affect our children and their future careers.

For example, the National Science Foundation has estimated that 2 million workers will be needed to support nanotechnology industries worldwide, and the global market for nanotechnology products could reach \$1 trillion by 2015.

We may feel as parents that the sciences are now so narrowly focused and highly technical that it is impossible for us to know everything about science let alone teach our children science — that it is better just to leave it to the professional teachers.

However, we do teach our children reading and writing, and while few of us are J.K. Rowling or C.S. Lewis, we know the basics and read to our young children and teach them how to read before they ever attend schools.

Merely being plugged-in to modern technologies is not the same as being scientific literate.

Science literacy requires a broad understanding of basic science concepts and the ability to apply those concepts and think critically.

It is necessary to help us make wise choices about public issues, and make sense of the increasingly technological world around us.

We don't all have to be “rocket scientists” and perform mind-numbing calculations to understand that Newton's laws of motion are impor-



## ways to create a love of science

tant to send a space shuttle into orbit.

How would our children best learn to be scientifically literate? Begin at home:

- 1** Encourage children to explore the world around them. Get out and “smell the roses” together.
- 2** Prompt children to expand on and explain their observations. “OK, so the sky is blue... but why?”
- 3** Ask the children to make predictions. “What would happen if ...”
- 4** Encourage children to ask lots of questions. Have them keep a Question & Answer notebook, where they can write down questions to investigate later — so they don't

always bug you :) — and then write down their answers.

**5** Help children to seek out the answers to their own questions. Science literacy is about seeking answers, not recalling random facts. As parents, we don't need to have all the answers but we can guide our children to learn how to find answers. We have many resources available, such as friends, family, the Internet, books and human experts. Encourage children to ask and then seek.

**6** When you read with your children, try to include some books that contain fun content about science.

**7** Enjoy hands-on projects together with your children. Repeat the experiments several times under the same conditions, and ask the children to record the results in their notebook. If a condition is changed, e.g., adding more water, are the results different than before? Is there a trend in the data when different amount of water is added?

Children are born scientists because of their natural curiosity of the world around them and openness to new ideas and practices. They are imaginative and innovative. We should encourage these habits of mind so that they continue to develop higher-order critical reasoning skills, problem-solving skills, and interpersonal communication skills to be successful independent life-long learners.

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