

## Parent (Teacher) Toolkit: Filling & Crossing Gaps

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This document is part of the YCISL Parent (Teacher) Toolkit Series which is aimed at empowering parents as teachers to develop youth creativity and leadership skills that support healthy learning.

There is a 2015 TEDTalk by Salman Khan in which he discusses knowledge gaps and how education models purposefully produce students with knowledge gaps. While that may seem to be a problem to most people, it is actually an opportunity to develop a critical life skill – and that is to develop a mindset that deals with gaps and not ignore them. Discoverers, innovators and leaders must have the productive ability to fill and cross gaps.

**BASICS:** We all have knowledge gaps. We're not experts at *everything*...and we don't have to be. In this lesson, we address small gaps in a knowledge chain. As an example, let's say we are learning how to calculate the area of a shape for a math class. We're taught to memorize formulas and how to apply them. But when we get our homework or test score back, it shows that we had one...or maybe more...incorrect answers. The score reveals a potential knowledge gap. The right thing to do would be to make sure that the gap is filled and the knowledge chain is complete.

As a warm-up, play a game where one or more letters are missing in a word and see how adeptly your child can complete the word. You can make it more fun by (a) using words in a favorite song, (b) using game pieces which have letters on them, or (c) make a copy of a page from a book and use correction fluid to cover up letters.

**BEGINNER:** Let's see what it's like to build and have a complete knowledge chain. Find instructions on how to build a paper airplane. There are designs for distance, for acrobatics and for accuracy. Review the steps then proceed to build the paper airplane. Practice building the paper airplane until it can be done without referring to the instructions.

**INTERMEDIATE:** This exercise will focus on filling in a knowledge gap. The first task is to locate a knowledge gap. Look through graded homework or tests, or do a practice test in any school subject. Then think of ways to fill in the gap. It could involve looking at the school textbook, or checking the web for a tutorial, or asking a family member, or communicating with the teacher. Find the best way to fill the gap to be able to complete the problem (and others like it) correctly.

**ADVANCED:** Crossing a knowledge gap involves a progress-oriented confidence in making assumptions in the face of uncertainty. Let's conduct a home-based research experiment to answer the question "How long does it take for an ice cube to melt?" It may help to first read about the properties of water and the phases of matter. Then design and conduct the experiment. With the experimentation completed, then ask a slightly different question such as (a) "How long does it take for an ice cube to melt outdoors?", (b) "How long does it take for an ice cube to melt in the refrigerator?", or (c) "How long does it take for an ice cube to melt in a cup of water?" Without actually doing another experiment, could your child give an answer?

