Solving Word Problem

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關鍵字 → 列式

文字題

答題 ← 計算

I don't know how to do it!
It's too difficult!
I have tried but …
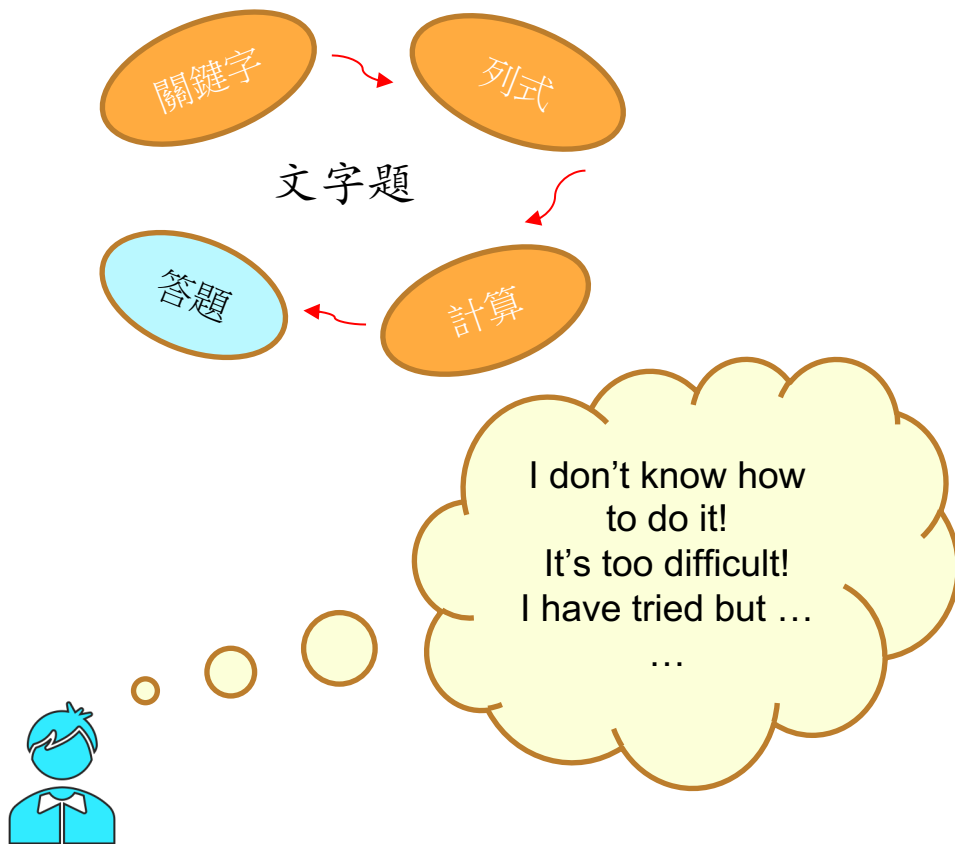…

Solve the following word problem

Anna ha sette caramelle.
Benny ha cinque caramelle.
Quante caramelle hanno in totale?

Anna

Benny

Totale

Anna has seven pieces of candy. Benny has five piece of candy. How many pieces of candy do they have in total?

Teaching Word Problem
Difficulties & Possible Solutions

https://padlet.com/samueltamchileung/w1xiuz6na1qk

Composition of Word Problems

Scenario
(Story? or combination of boring words?)

Information

Missing Links?

Questions

Missing Links (Students' common difficulties)

Most Students

- Try to write an **expression** before **fully understand** the question

  - Key word identification

  - Missing hidden information

NCS Students:
- Upset by too many unknown words
- Cannot calculate correctly

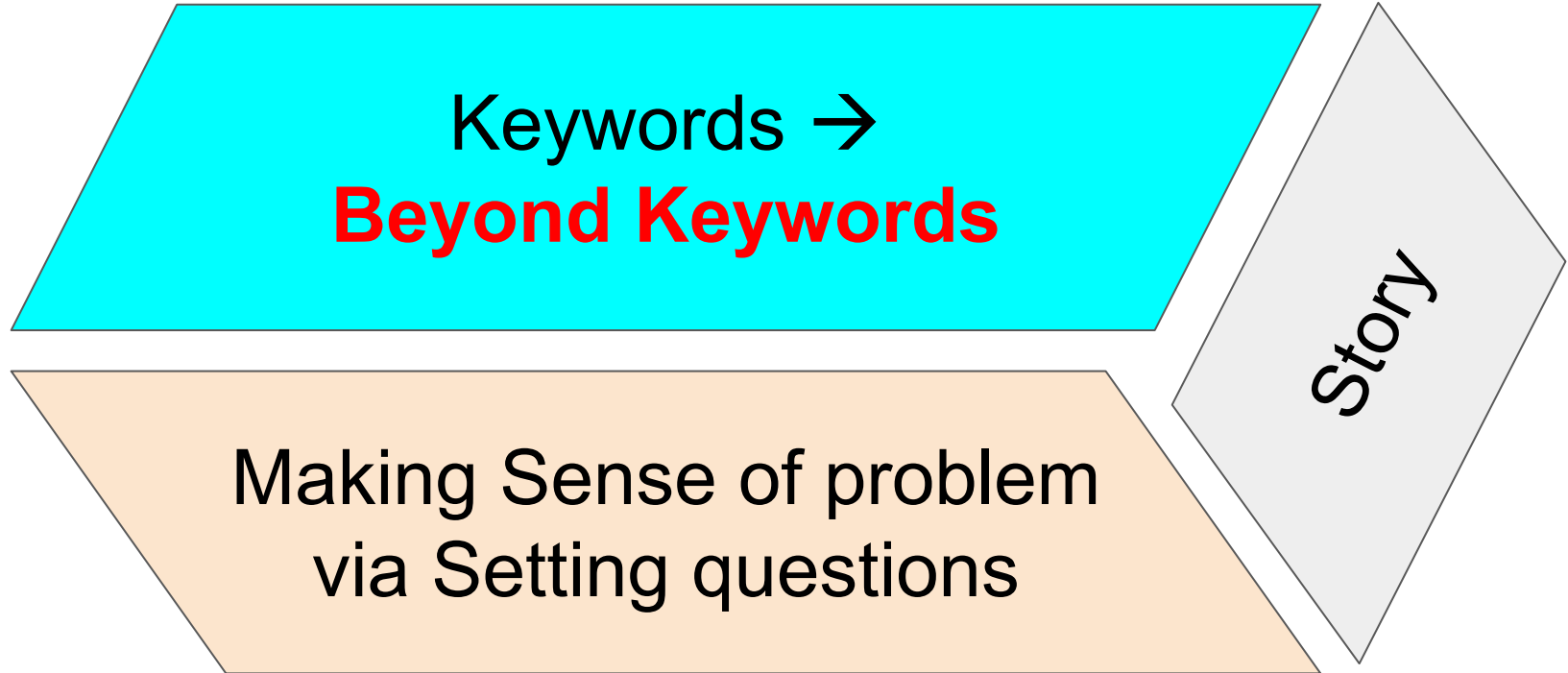Missing Links

Translate words into expression?
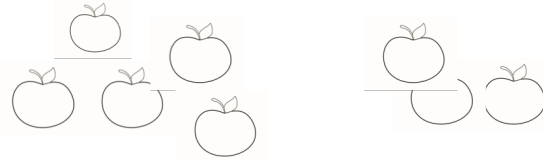
What information have students got? **(or fail to get?)**

Tools that help enhancing students' **problem solving skills**?

How to Prepare NCS Students for Word Problem

Keywords →
Beyond Keywords

Story

Making Sense of problem
via Setting questions

During the stage of learning arithmetic

- Link up arithmetic concepts and relations with a story
- Graphical representation
  - To remove language barrier
  - To taste/grasp the structure and the key terms

Find the **total** number of 🍎

Word problem design

● Change slightly so that students can observe, compare and have better understanding

One pencil costs $3.5. How much does 5 pencils cost?	One pencil costs $3.5. How much does 9 pencils cost?	One pencil costs $3.5. How many pencil can one buy with $30?

Word problem design:
Train students to **read** the word problem

Mary has 3 pieces of candy. Tom has 5 pieces of candy.
How many pieces of candy do they have in total?

Mary has 3 pieces of lemon candy. Tom has 5 pieces of apple candy. Ann has 4 pieces of milk candy.
1) How many pieces of lemon candy and milk candy are there in total?
2) How many pieces of lemon candy and pear candy are there in total?
3) How many pieces of candy are there in total?

How to help/train students to read questions they may not fully understand?

One toy car costs $25. How much does 4 toy cars cost?

One box of strawberry costs $25. How much does 3 boxes of strawberry cost?

How to help/train students to grasp the structure of the new kinds of questions?

One toy car costs $25. How much does 4 toy cars cost?

Four toy cars cost $100. How much does one toy car cost?

Word problem design

- Ask students to design a word problem that can be solved with the following expression

  (13+5)/3

- Encourage students to use multiple ways to present their own word problems
  o Mix drawings with verbal descriptions (especially students in KS1)
  o Mix drawings with words

Tools to help students decode word problems

- Bar Model
- Example https://youtu.be/RpmzFzBSppk

  - Let students decode the questions step by step

  - Allow students and the teacher to review students' thoughts together
- Math embedded in stories

Resource:

- Further readings / references

https://padlet.com/samueltamchileung/2c3cvl6g9r9s

Thank you