Definitely DOMINGUITA

SOLVING PROBLEMS WITH DOM AND HER CREW

Dom and her friends are problem solvers.
They solve mysteries.
They figure out how to outsmart bullies.
Sometimes they even do problems with numbers.

Dom and Pancho have a special way of solving problems. They learned that from Señora Más the best math teacher in the universe (if you ask anyone who's ever been her student.)

In the stories, Pancho and Dom use Señora Más's tricks to solve problems and solve mysteries.

Here's what she taught Dom and Pancho and then, Dom and Pancho taught Steph. At first Steph thought they were a little wonky, but once she saw how well it worked, she was sold.

DOM'S CREW'S PROBLEM SOLVING METHOD

You have to know what you want to know.
You have to know what you know.
You have to know what you need to know
and once you know all that, you can figure out the answer.

Here's a little more:

"You have to know what you want to know
                              —what is the answer you want to find?

You have to know what you already know
                              —what are the facts that the word
                              problem tells you?

You have to know what you need to know
                              —are there any other answers you
                              need to find or smaller problems you
                              need to solve before you start to figure
                              out your final answer?

It's only when you know all that, that you can figure out the answer."

TEACHER NOTES

The tricks that Dom and her friends use, can be used by students to solve the stories' problems along with Dom and her friends, reinforcing the idea that to solve a problem, solvers need to know what they know—what the problem tells them—what they want to know—the answer they are after—and what other problems they have to solve before solving the final problem. **KNOW BUBBLES** can help them in their problem solving endeavors.

To use these activities, first read *The Knight of the Cape* with the class and use it as the sample (see the guide below). Divide the class into three groups, have each group read one of the other books, solve the problems along with Dom, and present their findings to the class. **KNOW BUBBLES** and answer keys for each book's problem are included below.

Beyond the activities related to the book, are activities using practical problems on which students can use the same method.

KNOW BUBBLES

WHAT YOU WANT TO KNOW

WHAT YOU KNOW

WHAT YOU NEED TO FIGURE OUT TO SOLVE THE PROBLEM

THE KNIGHT OF THE CAPE

Read *The Knight of the Cape* and use this as the sample. Dom has a problem. She has to prove to Ernie Bublassi that she can indeed be a worthy knight.
She has to prove that a girl can be a worthy knight.

What does Dom WANT to know?
- She wants to prove to Ernie Bublassi that she can be a worthy knight.

What Does Dom KNOW?
- She knows that she needs her brother's help
- She knows that she has to do heroic things.
- She knows she has to have proof.
- She knows Ernie Bublassi doesn't like to read.

What does she NEED TO KNOW?
- Will her brother help her if it's for their Abuela?
- What kind of proof will Ernie Bublassi believe?
- What kind of activities will Ernie Bublassi think are heroic?

How does Dom finally solve the problem?
- Dom asks her brother to help her and they decide that Ernie   Bublassi will believe a book that records her knightly adventures.
- It has to be a book with lots of pictures because Ernie's not crazy about reading, besides, anyone can make up a story.   A picture shows the truth.
- Dom does several knightly adventures, but none of them are good enough to convince Ernie Bublassi until she figures out the very best adventure.
  - Sometimes problems require trial and error
  - When Dom decides to fight a giant, she will prove that she is a worthy knight, in the eyes of many because that is exactly what Don Quijote did.

Dom actually became a hero, solving a problem that just turned up in front of her. That was a problem that she had to react to. She didn't have time to think or plan. Sometimes problems are like that. But whenever we have the time, we can use a method for solving problems.

At the end of the first book, Dom realizes that she's a lot like Don Quijote. How is Dom like Don Quijote?

THE KNIGHT OF THE CAPE
Answer Key

WHAT YOU WANT TO KNOW

- How can Dom prove to Ernie Bublassi that she's a worthy knight? That girls can be knights?

WHAT YOU KNOW

- She needs her brother's help
- She has to do heroic things.
- She has to have proof.
- Ernie Bublassi doesn't like to read.
-

WHAT YOU NEED TO KNOW TO SOLVE THE PROBLEM

- Will her brother help her if it's for their Abuela?
- What kind of proof will Ernie Bublassi believe?
- What kind of activities will Ernie Bublassi think are heroic?
-

THE KNIGHT OF THE CAPE
The Solution

Dom asks her brother to help her, and Dom gets her brother to agree to put together a book that records her knightly adventures. Dom gets him to agree because she says it's for their Abuela.

The book has to have a lot of pictures because Ernie is not crazy about reading and anyone can make up a story. A picture is proof.

Dom does several knightly adventures, but none of them seem good enough to convince Ernie Bublassi. Often, solving problems requires trial and error.

Dom decides that she must fight a giant. This is the only way left to prove that she is a worthy knight because this is exactly what Don Quijote did.

Dom actually became a hero, solving a problem that just turned up in front of her. That was a problem to which she had to react. She didn't have time to think or plan. Sometimes problems are like that. They have to be solved on the fly. But whenever we have the time, we can use a method for solving problems.

CAPTAIN DOM'S TREASURE

The Problem

Captain Dom and her crew find a treasure map hidden between pages 168 and 169 in an old copy of *Treasure Island*.

Read the story and as you read, write on the **KNOW BUBBLES** as if you were Dom and her crew.

Write what you want to know
— what is the final answer or answers that you want to find.
Write what you know
— what the map tells you.
Write what else you need to know before you can solve the problem
— what smaller problems do you need to solve before finding the answer you're looking for?

Use the space below (and more paper if you need to) to write a statement as to how Captain Dom and her crew found the solution.

WHAT YOU WANT TO KNOW

Where is the treasure?

WHAT YOU KNOW

The map has numbers
The map has symbols
The map was inside *Treasure Island*
The map is on a flyer of things happening in Mundytown around
June 20-23.
Book was checked out last on June 25 1967.

WHAT YOU NEED TO FIGURE OUT TO SOLVE THE PROBLEM

What do the numbers mean? —Distances —Steps or feet? Adult steps?
What do the "lollipops" mean? — Trees
What could the treasure be? — Family silver, letter with a secret, stolen jewels
or money.
Where and when did it happen? — Mundytown and sun highest in sky.
What does the words Dial mean? — Combination
What does the word Diagonal mean? — Distance across the trees?
Why a little x and a big x? — where the key is and where the treasure is?
When did the robbery happen?

STUDENT NAME:_____

CAPTAIN DOM'S TREASURE
Answer Key

Here's how Dom and the crew figured things out:
It's a process. It's trial and error. Things change.

1. First the group tried to figure out what the loot might be, that might give them a clue for where to look. Remember, the map didn't really say where it was.
    1. They thought it might be family jewels being hidden, but that didn't make sense. Neither did a letter with a secret.
        1. Even if it did make sense, what else could they figure out to know where to look?
    2. They thought it was something that was stolen.
        1. It made sense because a thief would hide it, especially if someone was after them, and come back for it later.
        2. They could actually look in the paper for robberies, if they knew a date.
        3. In Treasure Island, Jim and his friends were looking for stolen treasure so Dom and the friends liked pursuing that idea.
2. Then Steph figured out it happened in Mundytown. That was a pretty safe thing to say because the flyer was about things in Mundytown.
3. They decided that the things that looked like lollipops were trees, because that was another safe thing to say.
4. They thought the numbers might be a combination for a lock, or distances.
    1. Decided on distances because they could look for a place that had trees that were 37 feet apart.
5. They thought about when the robbery might have taken place.
    1. The flyer said the carnival was in town between the 20th and the 23rd of June.
    2. One of the clues was that the sun was highest in the sky, that would be the summer solstice which would have been between the 20th and the 22nd of June.
    3. They thought the robbery couldn't have happened before the book came to the library, because, of course, the book wouldn't have been at the library. But then Steph said, they should look at the last date the book was checked out.
        1. If someone had checked out the book later, they would have taken the map.
        2. Now they had a date, June 25th 1967. Now they could look at the newspapers.

4. They didn't find the newspaper, but they found something even better, a picture of their friend el Señor Fuentes. He let them know there was a robbery, that Kowalski's grocery was robbed and that the money was never found!
5. Now they had to figure out where.

6. They figured that the only place where there might be four trees 37 feet apart in Mundytown was in parks. Also, the word Park was one of the clues on the map.
   1. They looked in all the parks they knew, until by chance, Dom saw three trees on the roof of a building, next to a park while looking along the diagonal of a sundial.
   2. Dom then went to try to check and when she saw the stump of the fourth tree, she knew she was in the right place.
   3. When Juan Largo told her he knew about the sundial and Dom and her crew hadn't mentioned the dial, Dom was sure the loot was on that roof and that Juan Largo was involved in the robbery!
7. They solved the problem. The rest of the book, is trying to outsmart Juan Largo!

ALL FOR ONE

The Problem

Dom comes head to head with the dastardly Vinnie Bublassi—the oldest of the Bublassi bullies. Vinnie hides a check that Dom brought to Tava's Butcher Shop to pay for the pigs for Lent Fuentes' quinceañera party. Since the check is lost, the pigs go to someone else, threatening to ruin the party. Dom and the musketeers must solve the problem and make sure the Leni has a perfect quinceañera party.

Read the story and as you read, write on the **KNOW BUBBLES** as if you were Dom and the musketeers.

Write what you want to know
      —what is the final answer or answers that you want to find.
Write what you know
      —what you know from knowing Leni and living in Mundytown.
Write what else you need to know before you can solve the problem
      —what smaller problems do you need to solve before finding the answer you're looking for?

Use the space below (and more paper if you need to) to write a statement as to how Captain Dom and her crew solved the problem.

ALL FOR ONE

Answer Key

WHAT YOU WANT TO KNOW

- Why did Vinnie Bublassi trick Dom?
- How did Vinnie Bublassi know all the details of the party?

WHAT YOU KNOW

- Leni is having a quinceañera party
- Vinnie Bublassi wants to ruin Leni's party
- It takes money to have a quinceañera party
- You send invitations way ahead of time
- There is only one bakery in Mundytown
- Abuela can help

- What else could Vinnie ruin?
- Who is Franklin Desmond?
- Are Franklin Desmond and Vinnie in cahoots?
- Where did Leni buy her cake and flowers?
- What are the other plans that the Bublassi Brothers have?
- What do the Bublassi Brothers mean
- when they say they'll see the musketeers

ALL FOR ONE
The Solution

When Dom recognizes the family resemblance between Vinnie and the other Bublassi bullies, Ponsi and Ernie, the musketeers find out from Dom's brother Rafi that Vinnie Bublassi was fired by el Señor Fuentes for not doing a good job at the junk store. Vinnie's mother found out and Vinnie was grounded and couldn't play in the homecoming football game. It is reasonable to say that Vinnie is out for revenge and the way to get revenge is through Leni's quinceañera party.

When they confront Vinnie and Mr. Tava about the pigs Dom and the musketeers find out two things:
• There is no way to get back the pigs
• The pigs were sold to a man named Franklin Desmond

Dom and the musketeers call Abuela to find out what else Vinnie could ruin.
• Cake
• Flowers
• Possibly jewelry

It is easy to figure out where Leni got the cake, there is only one bakery in town. They confirm her order. At the bakery, they learn four things:
• Franklin Desmond was also trying to buy a cake
• A person with a cracking girl voice has called to change Leni's order
• The name of the florist where Leni ordered her flowers.
• It is very likely that Desmond and Vinnie Bublassi are in cahoots.

At the florist they:
• Find proof that Desmond and Vinnie are in cahoots (the same phone number called to place Desmond's order and mess up Leni's order.

When they talk to Desmond they find out:
• The brothers have an appointment at a jeweler —one more thing to protect

When Ernie and Ponsi come to the community center, they find out:
• The brothers are going to ruin the community center where the party is.

One other thing to discuss with students is how knowing that a party costs a lot of money is not a fact that impacts the problem. Sometimes extraneous facts will cloud problem solving.

SHERLOCK DOM
The Problem

Sherlock Dom, and Steph Watson find themselves in Tapperville and are immediately faced with a problem, Esther, the neighbor's goat is lost, or STOLEN! They enlist the help of Inspector Pancho on the phone to help them solve the problem.

Read the story and as you read, write on the **KNOW BUBBLES** as if you were Dom and her crew.

Write what you want to know
    —what is the final answer or answers that you want to find.
Write what you know
    —what do you know about Esther, her owner and Tapperville
Write what else you need to know before you can solve the problem
    —what smaller problems do you need to solve before finding the
    answer you're looking for?

Use the space below (and more paper if you need to) to write a statement as to how Sherlock Dom and her crew solved the problem.

SHERLOCK DOM

Answer Key

WHAT YOU WANT TO KNOW

- Where is Esther
- What happened to Esther?

WHAT YOU KNOW

- Esther is a milk goat that went missing that morning
- Esther escapes often because Mrs. B. leaves gate open
- Marabella milks Esther twice a day and gets paid for it
- Marabella wanted to buy a catcher's helmet with her pay
- When Steph milked Esther, Marabella didn't get paid
- Marabella couldn't get her helmet
- Esther lives in a barn that opens into a fenced pasture
- Esther normally returns
- Goats don't like water
- Marabella wears flip-flops, Mrs. B. Boots.

WHAT YOU NEED TO KNOW TO SOLVE THE PROBLEM

- Where did Esther go? There could be tracks
- Would a goat go with a stranger without kicking up a fuss?
- What does Esther look like?

SHERLOCK DOM
The Solution

When Sherlock Dom and Steph Watson examine the barn like Sherlock Holmes would, they find clues:
- A leash is missing - it is a chain leash
- The leash was dragged through the barn to the door of the goat pen
- The person who got the leash was probably short — probably used the branch on the floor to get the leash.
- A milk bucket is missing which could mean that whoever took Esther will continue to milk her, maybe (they hope) not make her into goatburger.
- They find out what Esther looks like when they meet Albert, Esther's mate.

When the detectives sneak behind Birdie Ballou's house to look for clues they find:
- Goat berries, hoof prints and flip-flop prints which have a crack on the sole.
- Dom is convinced this proves Marabella did it. Steph and Pancho convince Dom that the print belongs to someone small. It is about the size of Dom's hand print.

The detectives figure that the goat could be close by, in town, or could have been taken to a farm outside of the tiny town. They can't look at all the farms outside of town and a goat could easily be hidden in a farm. Only place to look is in town.

They follow a false clue when they see what they think is Marcella's hair on a door to a storage unit and believe the bad smell coming from the storage unit is Esther. It turns out it's a softball storage unit and it holds smelly cleats and softball equipment. Marabella goes in there all the time.

From the vet the detectives find out:
- A map of the town which shows the marsh trail goes from Mrs. B's to Lost Town
- A convict had hidden himself in Lost Town for a while
- Lost Town is dangerous
- The vet doesn't think Marabella is a thief
- Goats aren't crazy about strangers, so probably someone she knew took her.

On their first trip to Lost Town (even though they shouldn't have gone) the detectives find an abandoned kitten. They also hear a scary sound which seems to be recorded. This lets them know they are on the right trail.

Then early the next morning they are about to go back to Lost Town with the vet, when they see Marabella and a little boy. They follow them and find all the answers.

Doubloons

If Dom and her crew find 300 doubloons in one chest, and 400 doubloons in another chest, how many doubloons do they have altogether?

What I want to know:
How many doubloons did Dom and her crew find?

What I know: The facts the problem tells me:
One chest holds 300 doubloons
One chest holds 400 doubloons

What else I need to know:
Nothing

The answer: $300 + 400 = 700$ Doubloons

Quinceañera Planning

Leni is planning the flowers for her party. There will be an arrangement at each table for guests, and there will be 20 tables for guests. Each arrangement will have three white flowers, and two blue flowers. Lena also wants purple flowers, three more purple flowers than white flowers. And she wants yellow flowers—five more yellow flowers than blue flowers. How many of each type of flower will Leni buy? How many total flowers will she buy?

Working it Out

What we want to know:
      How many of each type flower will Leni buy?
      How many total flowers will Leni buy?

What we know:

      There are 20 tables, one arrangement at each table
      Each arrangement has 3 White Flowers
      Each arrangement has 2 Blue Flowers
      Each arrangement has purple flowers
      Each arrangement has yellow flowers
      The number of purple flowers is White + 3
      The number of yellow flowers is Blue + 5

What we need to know:
      How many purple flowers in each arrangement
      How many Yellow flowers in each arrangement
      How many total flowers in each arrangement
      How many flowers in 20 arrangements

Solution

Figuring out what we need to know:

Purple = White + 3
       =   3   + 3 = 6

Yellow = Blue + 5

       =.   2   + 5 = 7

Flowers in Each Arrangement = White + Blue + Purple + Yellow
                            =   3   + 2   +   6   +   7
                            =   18 flowers

Flowers in 20 Arrangements = 20 x 18 = 360 flowers