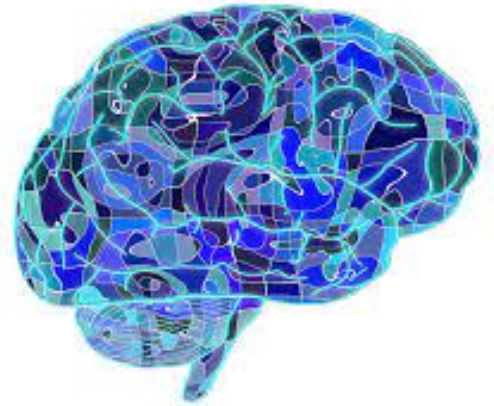


How Does One Think Deeply?



Description:

We are often told to think about something more or to dig a little deeper. What exactly does that mean? How exactly does one do that? That is what this introductory lesson will seek to answer with ways you can get your brain to think with more depth.

Depth and Complexity icons:

All of them

Product:

Students will have learned the Depth and Complexity icons and know how to think deeper.

Skills:

Solving logic puzzle

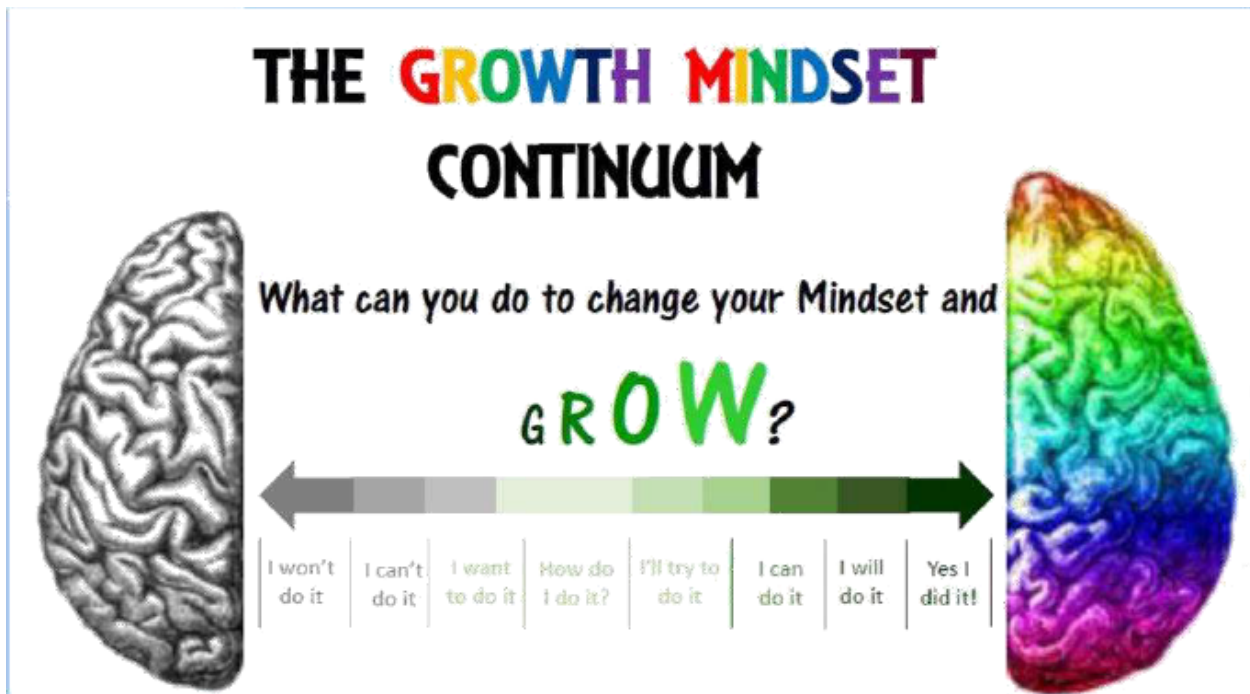
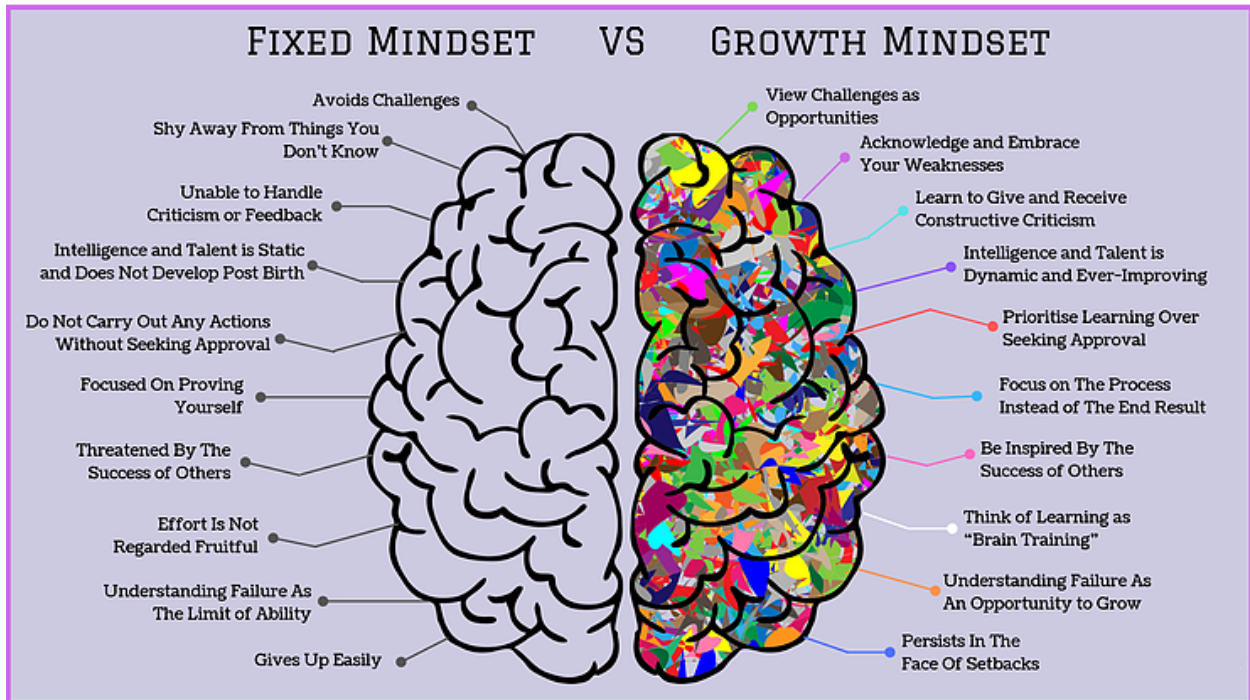
Solving Rebus puzzle

Solving Sudoku puzzle

Calendar:

| | | | | |
|---------------------------|--|--|----------------------------------|--|
| What is a growth mindset? | | Introduction to the Depth and Complexity icons | How do you get to deep thinking? | (students should choose book to read for the next 2 months for Big Idea project) |
| How to do Sudoku | | How to do Rebus puzzles | How to do logic puzzles | |

Lesson 1 – What is a growth mindset?



FIXED MINDSET

MINDSET CHARACTERISTICS



GROWTH MINDSET

| | | |
|--|----------------------------|---|
| SET - YOU HAVE WHAT YOU HAVE | SKILLS+INTELLIGENCE | CAN BE GROWN AND DEVELOPED |
| HOW THEY LOOK PERFORMANCE FOCUS | MAIN CONCERN | LEARNING / GETTING BETTER PROCESS FOCUS |
| SOMETHING YOU DO WHEN YOU'RE NOT GOOD | EFFORT | AN IMPORTANT PART OF LEARNING |
| GIVE UP / CHECK OUT | CHALLENGES | PERSEVERE / WORK THROUGH IT - SHOW MORE GRIT |
| TAKE IT PERSONAL GET DEFENSIVE | FEEDBACK | LIKE IT / USE IT TO LEARN |
| HATE THEM / TRY TO AVOID MAKING THEM | MISTAKES | TREAT THEM AS A LEARNING OPPORTUNITY |

Name _____

Fixed or Growth Mindset?

Cut, sort, and paste the phrases into the correct column below.

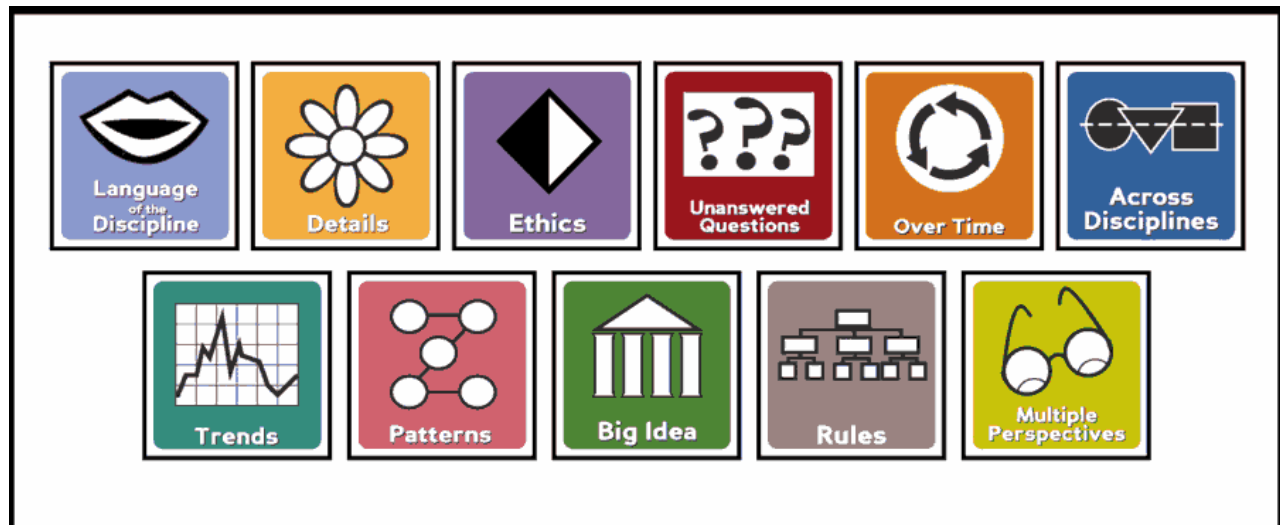
|  Someone with a Fixed Mindset... |  Someone with a Growth Mindset... |
|--|---|
| | |

| | |
|---|--|
| • is inspired when others do well | • is jealous when other kids do well |
| • keeps trying until they can do it | • can learn from their mistakes |
| • believes it doesn't help to work hard | • likes to try new things |
| • loves a challenge | • gives up easily |
| • won't try new and hard things | • believes effort helps them learn |
| • avoids challenges | • believes if they don't try they won't make a mistake |

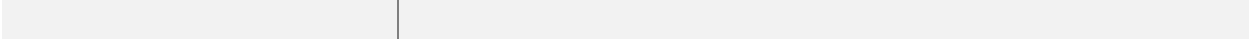
Lesson 2 – Introduction to the Depth and Complexity icons

Give a brief description of each of the Depth and Complexity icons

As you describe it, put the magnet on the board that represents it or point to the poster



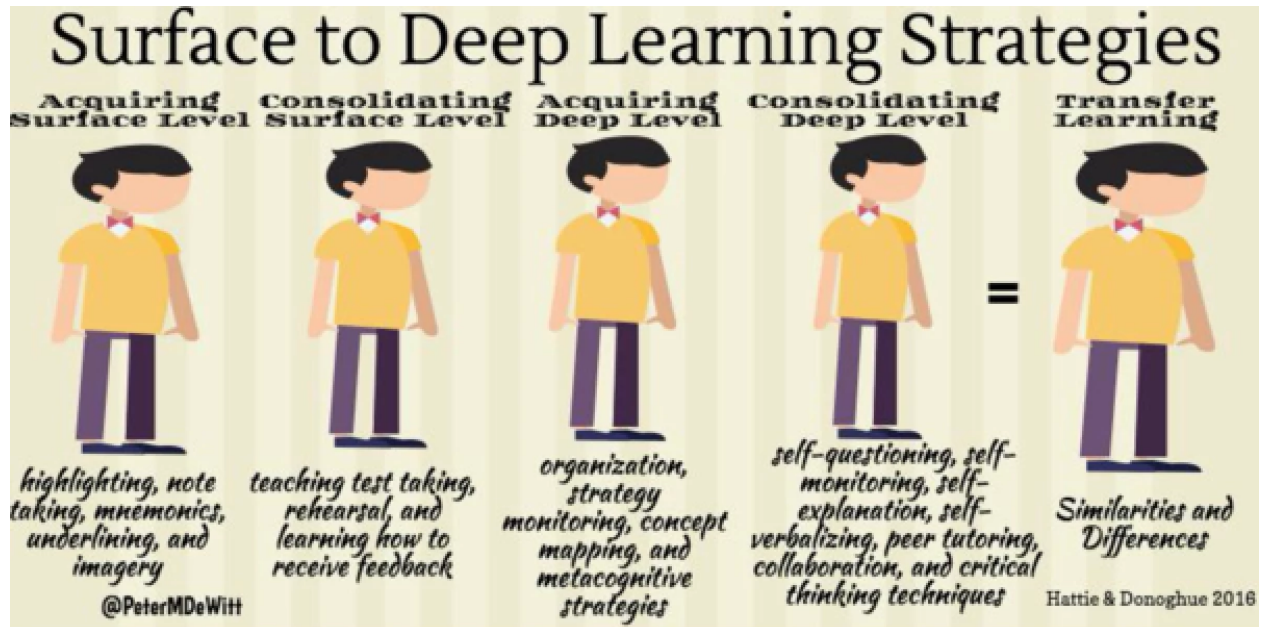
| ICON | DEFINITION |
|-----------------------------------|---|
| LANGUAGE OF THE DISCIPLINE | Vocabulary terms specific to the content or discipline. |
| DETAILS | Examples and evidence to support opinions and ideas. |
| ETHICS | The moral principles involved including controversy and arguments. |
| UNANSWERED QUESTIONS | This is what is not yet clear. What still needs to be addressed or what is missing? |
| OVER TIME | The relation of something in the past, present, and future. What changes and why do they do so? |
| ACROSS DISCIPLINES | How the concept is seen in other subject areas. |
| TRENDS | Factors that cause events to occur. |
| PATTERNS | When someone reoccurs, what is its sequence, can you predict what will happen next? |
| BIG IDEAS | A general statement that applies to ideas, and what is the main one. |
| RULES | The guidelines and regulations that provide structure. |
| MULTIPLE PERSPECTIVES | An event seen through several different sets of eyes. |



Reflection question/exit ticket:

How do you think these ideas might cause you to think deeper?

Lesson 3 – How does one think deeper?



Look at this painting



Tell me what you see

Tell me what you don't see

What is your opinion of the painting? How do you justify that?

What questions might you have?

Does any of that change when you hear its title "Nighthawks"?

Lesson 4 – Using Sudoku to activate deep thinking

If you do not feel comfortable explaining it yourself, you can show this video

<https://youtu.be/zlDw7NH2yew>

Sudoku is a puzzle that uses logic, deductive reasoning, and mathematical thinking in order to solve.

Solvers are provided with a grid where some of the numbers are filled in, but some are not. A traditional Sudoku puzzle has 9 boxes in the grid, you must use the numbers 1, 2, 3...all the way to 9, with none repeated inside the grid. There are 9 grids in the entire puzzle. You cannot have the same number across the entire row or column of boxes. It is up to the sudoku solver to determine what numbers go into the missing squares using logic. A blank sudoku grid looks like this:

The difficulty in the puzzle comes in how many numbers are provided. The more numbers, the easier it is. Some really difficult ones only have a few numbers. You can also decrease or increase the number of grids.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2 | 6 | 3 | 7 | 5 | | 8 | | |
| | 8 | 5 | | | | | | 7 |
| | | | | 9 | | 6 | 3 | |
| 6 | 1 | | 3 | 7 | 5 | | | |
| 7 | | 2 | | 4 | | 5 | | 3 |
| | | | 1 | 2 | 9 | | 6 | 4 |
| | 4 | 6 | | 1 | | | | |
| 3 | | | | | | 1 | 7 | |
| | | 7 | | 6 | 3 | 4 | 5 | 8 |

Two strategies you might employ:

Strategy #1 – look for pairs of numbers either across or down the grids. It will clue you in to the remaining grid's number.

Strategy #2 – once you have run out of pairs, choose the grid that has the greatest amount of numbers filled in. Try and use the surrounding grids to clue you in to where the remaining numbers go.

Once you have filled in new numbers, repeat strategy #1 again.

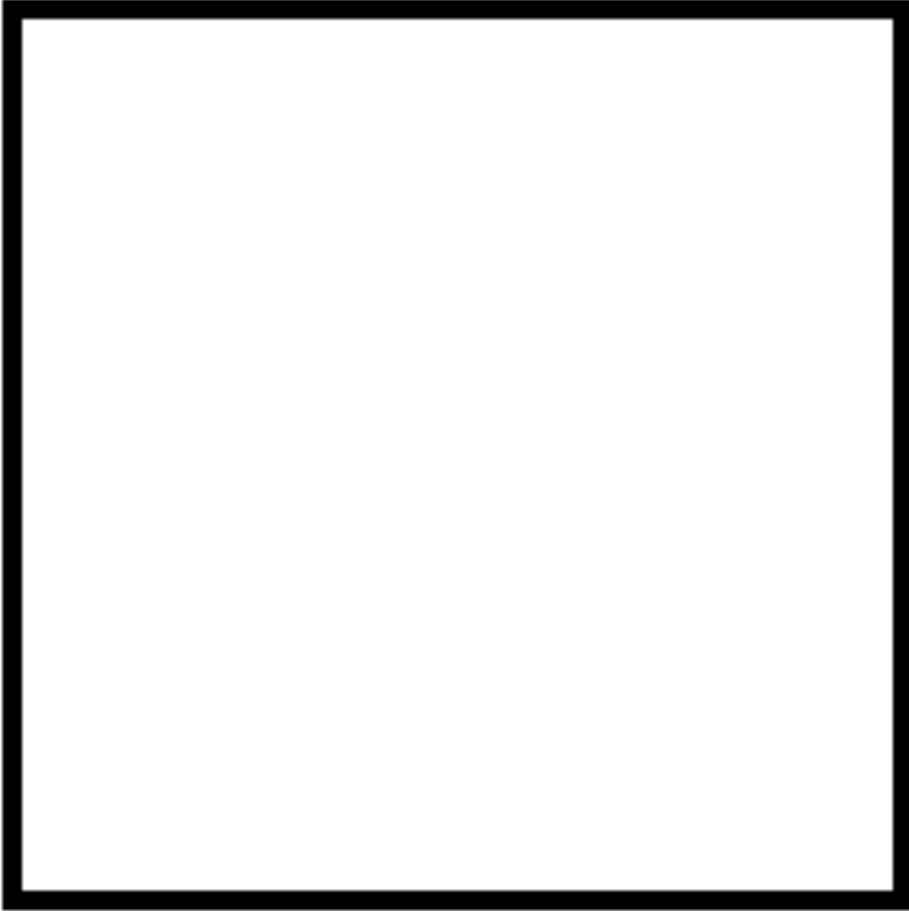
Students can spend the rest of the time working on a Sudoku puzzle.

Lesson 5 – Using Rebus puzzles to activate deep thinking

If you do not feel comfortable explaining it yourself, you can show this video

<https://youtu.be/MmPCPE3Wy7w>

These will be common sayings.



think

Think outside the box



insult
+ injury

Combining words and symbols

Adding insult to injury

SECRET
SECRET
SECRET

Position on the page

Top secret



HERRING

Colors

Red Herring



print

Size or style of font

Fine print



Words interacting with each other

Cross breed



HEARTEN

Partial words

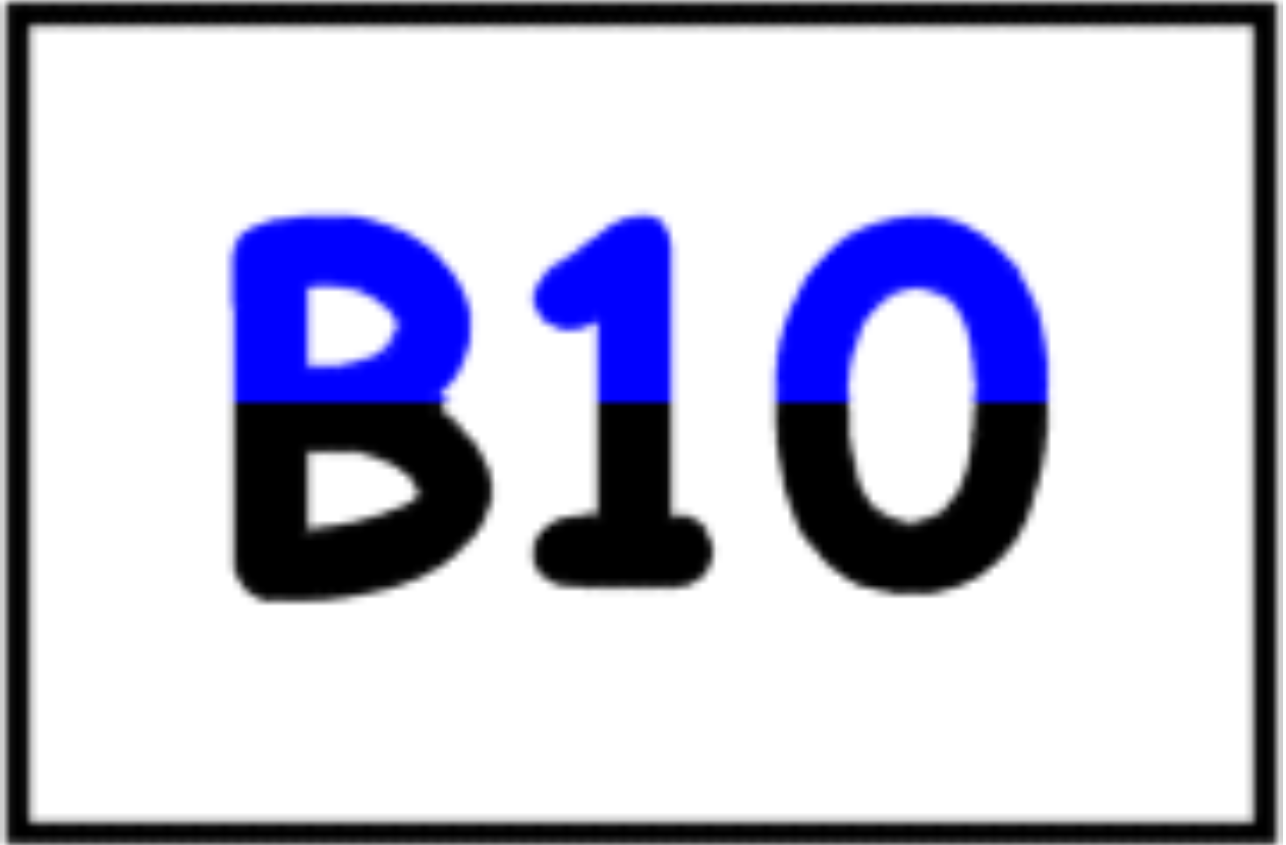
Half hearted



STA4NCE

Symbols, numbers, or letters
inserted into a word

For instance



Phonics

Beaten black and blue

GIVE GIVE
GIVE GIVE
GET GET
GET GET

Number of words used

Forgive and forget

0
—
MD
PhD
BA

AID ←
AID
AID

R|E|A|D|I|N|G

ECNALG

aged aged aged

he's / himself

1

whonceile

CHANGE

L ~~E~~ A S T

man
—
board

THING MORNING THING

Lesson 6 – Using logic puzzles to activate deep thinking

If you do not feel comfortable explaining it yourself, you can show this video

<https://youtu.be/8-kDvPPLXJ0>

Do a practice puzzle together

Find out who plays what instrument

| | Drums | Keyboard | Lead Guitar | Bass Guitar |
|---------|-------|----------|-------------|-------------|
| John | | | | |
| Paul | | | | |
| George | | | | |
| Richard | | | | |

1. John cannot play the drums.
2. George and Paul's instruments have strings.
3. George plays the melody. |



click once



click twice



click thrice

| | Colton | Ella | Kyla | Owen | basketry | camping | horsemanship | swimming | 100m hurdle | 400m relay | pole vault | shotput |
|--------------|--------|------|------|------|----------|---------|--------------|----------|-------------|------------|------------|---------|
| \$360 | | | | | | | | | | | | |
| \$870 | | | | | | | | | | | | |
| \$1330 | | | | | | | | | | | | |
| \$1380 | | | | | | | | | | | | |
| 100m hurdle | | | | | | | | | | | | |
| 400m relay | | | | | | | | | | | | |
| pole vault | | | | | | | | | | | | |
| shotput | | | | | | | | | | | | |
| basketry | | | | | | | | | | | | |
| camping | | | | | | | | | | | | |
| horsemanship | | | | | | | | | | | | |
| swimming | | | | | | | | | | | | |

1. Either the athlete who won the 100m hurdle competition or the athlete who won the 400m relay competition awarded the basketry merit badge. ⚡
2. The athlete who won the 400m relay competition is not Ella and didn't award the camping merit badge. ⚡
3. Colton didn't award the swimming or camping merit badge. ⚡
4. The athlete who won the 400m relay competition didn't award the basketry merit badge. ⚡
5. Colton received a larger reward than the scoutmaster who awarded the horsemanship merit badge. ⚡
6. Kyla received a larger reward than the scoutmaster who awarded the basketry merit badge. ⚡
7. Of Colton and Ella, one earned the \$870 reward and the other awarded the camping merit badge. ⚡
8. The athlete who won the 400m relay competition is not Owen. ⚡
9. The one who received the \$1330 reward came away with the gold in the shotput competition. ⚡
10. The one who received the \$870 reward awarded the basketry merit badge. ⚡
11. The athlete who won the 100m hurdle competition is not Kyla. ⚡

| | | | |
|--------|--------|------------|--------------|
| Colton | \$870 | 100 hurdle | Basketry |
| Ella | \$1330 | Shotput | Camping |
| Kyla | \$1380 | 400 relay | Swimming |
| Owen | \$360 | Pole vault | Horsemanship |