

# ***PROBLEM SOLVING – DIME MUSEUM HARRY***

Wisconsin State Curriculum Alignment:

Marketing E.4.1 – Give examples that show how the problem-solving process works.

Marketing E.4.2 – Explain when problem-solving could or should be used

Marketing E.4.3 – Identify a specific problem or concern and evaluate it.

Marketing E.8.2 – Apply problem-solving skills to a current issue or concern

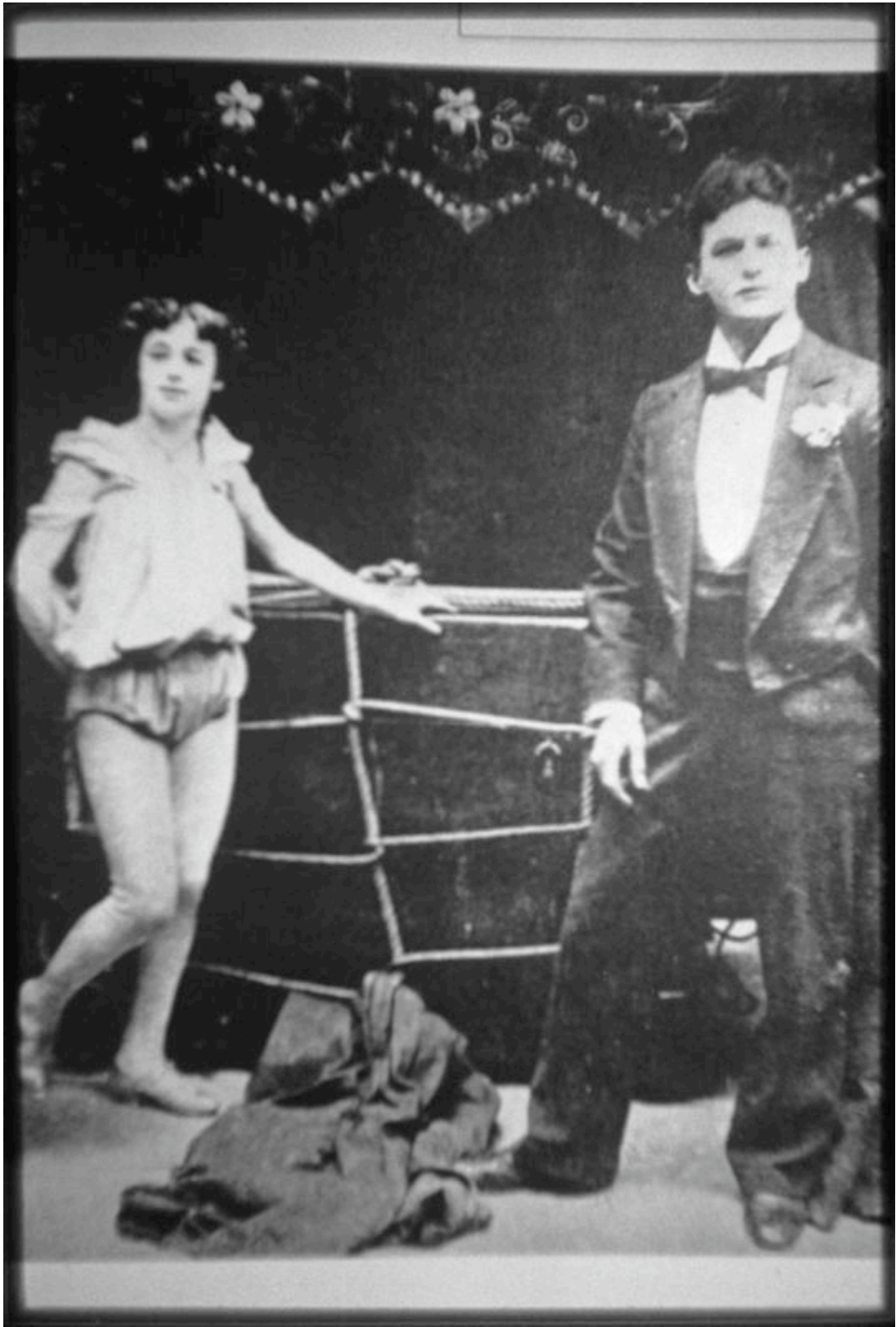
- Gather and interpret information about the concern
- Form sound conclusions about what should be done in the situation
- Give reasons to support conclusions
- Evaluate the evidence and reasons used in forming conclusions

Marketing G.4.3 – Use adult role models and other resources to learn about problem-solving as it relates to work in each of the four broad types of work (human, enterprise, technology, invention)

When Houdini was 17 years old, he and his younger brother Theo performed at the Wonderland Theater, a dime museum in Milwaukee, Wisconsin. It was November 7, 1892 when Houdini and Theo took the stage at the Wonderland. They performed their Mystery Box trick for the anxious audience. Larry Wilden writes in his article, “Milwaukee’s Dime Museums,”

In the illusion performed at Wonderland, [Houdini’s] hands were tied behind his back and he was placed in a sack with its mouth securely tied shut. The sack was then placed in a large box which was fastened, locked, and tied with more ropes. The brothers worked a new twist into this old trick that was more than just the expected escape. A curtain was placed over the box with [Houdini] inside. Three seconds later, when it was removed, [Houdini] was standing next to the box. When that was unlocked, Theo was inside the sack with his hands tied behind his back.

Try to imagine what it might have been like to be in the audience on November 7, 1892 and watch Houdini and his brother Theo perform the Mystery Box illusion, later called the Metamorphosis. Imagine also that you are Houdini preparing to perform the trick for the audience. You are about to have your hands tied behind your back. Your brother will place you in a sack which will be tied shut.



Houdini and his wife Bess perform the Metamorphosis. Collection of the Outagamie County Historical Society.

Then, he will place you in a trunk that is fastened, locked, and tied with more ropes. It seems as if you are stuck, but in just three seconds time, you will have switched places with your brother, and he will have his hands tied behind his back, and he will be tied in the sack and locked in the trunk.

How is this possible? Houdini was a great problem solver. He found ways to do that which seemed impossible to the audience. The Mystery Box (Metamorphosis) trick presented a problem to Houdini – He had to figure out how to quickly release himself from the restraints of the rope, sack, and trunk, while at the same time his brother had to be restrained and shut in the trunk. Let's go through some of the steps of problem solving to see if you can help Houdini find a solution to his problem. First, it is important to **Understand the Problem**.

- 1) How would you describe the problem? State the problem in your own words.
- 2) What are you trying to find or do? In other words, what does the solution of the problem look like?
- 3) What information does the description of the trick/problem give you? What information is missing or unknown?

Secondly, **Create a Plan of Action**

- 1) Look at related problems, and determine if the same technique can be used to solve this problem.
- 2) Make a diagram.
- 3) Guess at the solution and check your ideas to see if they are workable.
- 4) Identify sub goals (such as escape from rope around wrists and escape from sack.)

Thirdly, **Carry out the Plan**

- 1) Implement your plans from step 2.
- 2) Check each step as you proceed. (Illustrate how your ideas will work.)
- 3) Keep an accurate record of your work. Don't just keep your ideas about solutions in your head; write them down.

Step 4: **Looking Back**

- 1) Check your results (It may not be reasonable with Houdini's kinds of problems to try the solution yourself, but research about Houdini's magic can help you to know how Houdini solved the problems behind his illusions, escapes, and tricks.)
- 2) Interpret your solutions in terms of the original problem. In other words, does the answer make sense? Is it reasonable?
- 3) Think about other possible ways of solving the problem. Are there other answers that also work?
- 4) If possible, find similar problems for which your techniques will work as well.

Some information that may help as you attempt to solve the problem of the Mystery Box (Metamorphosis) Illusion:

- 1) Houdini used different methods of escaping from restraints. Sometimes, Houdini hid keys, lock picks, or tools on (or in) his body. He put lock picks and keys in his hair and could swallow and regurgitate tools. He might also hide keys, tools, or lock picks in his clothing. Sometimes, Houdini could wiggle his way out of restraints such as handcuffs, ropes, or straight jackets, or he used cuffs that were rigged to open easily. Houdini also might wear a metal plate on his leg to break open locks with a sharp knock.
- 2) Houdini was a creative problem solver. He could often see that there was more than one solution to a problem. He played upon the audience's assumptions about the way things worked, and their desire to be fooled, in order to be successful in his escapes and illusions. For example, because the audience saw how Houdini stepped into the sack and was tied up in it and how he entered the trunk and was locked inside, they probably assumed that in order to come out, all of these actions needed to be "undone." They most likely thought that the sack had to be untied and the trunk unlocked and opened in the same way, in order for Houdini to get out and Theo to get in. But Houdini knew that there was more than one way of doing things – he was a master at devising unlikely ways out of restraints like sacks or boxes.
- 3) Remember that the Mystery Box (Metamorphosis) was performed behind a curtain. The curtain would be opened while Houdini presented the trick and was tied up, restrained in the sack, and locked in the trunk. Then, Theo would close the curtain and count to three before Houdini opened the curtain to reveal the switch. The audience could not see what went on behind the curtain.

Come up with a possible solution for the Mystery Box (Metamorphosis) trick. As a class, you can check your work by visiting the Outagamie County Historical Society's *A.K.A. Houdini* exhibit (and trying the trick yourselves in a safe environment), visiting our virtual exhibit at [www.foxvalleyhistory.org](http://www.foxvalleyhistory.org), or researching Houdini's magic. *Who Was Harry Houdini?* By Tui T. Sutherland (Scholastic Books, 2003) provides an explanation of the trick and gives a biography of the Master Mystifier.