

**Day 8: Look for and make use of structure**

**Objective:** You will look closely for patterns or structure in order to solve a problem; apply concepts to similar events while recognizing what is similar and what is different this time.

**Rationale:** When a new problem arises, chances are good that there has been a precedent set previously to teach us about how things worked out the last time something similar happened.

**Goal:** Learn about the “before” and “after” of problems in your community. How did they originate? What has been done to address them?

In order to better understand how problems were solved and how precedents were set during the creation of our nation’s government, students will read an excerpt from the Federalist Papers to learn about how Founding Fathers created solutions to problems.

**Key Terms:** dopamine, oxytocin, serotonin, endorphins, neurotransmitters

**Materials & Resources:**

**Social Studies:** Federalist, No. 78 (Included on Resources page - “Social Studies Day 8”)

**ELA:** Creating Headlines for an Article

**Science:** Neurotransmitters [Types of neurotransmitters \(video\)](#)

[4 Ways to Hack Your Brain Chemicals to Become More Productive](#)

**ACTIVITIES:**

**Social Studies**

- **Read** excerpt from Federalist Papers’ No. 78 examining the judicial branch of the proposed government.
  - Primary source excerpt from Federalist Papers’ No. 78 -- (Lexile level 1190)
  - Text included on “Resources” page.
- **Respond** to the following questions:
  - 1) Why does Alexander Hamilton consider the judicial branch to be the least dangerous to the political rights of the Constitution?
  - 2) What is the proposed solution when it occurs that, “There are two laws existing at one time, clashing in whole or in part with each other.”?
    - a) Explain the structure of this proposed solution.
    - b) Provide an example of how the “Supremacy Clause” may apply today.

## ELA

- **Draft** a headline relevant to your scenario (for a newspaper article, personal blog, or yearbook page, for example) that highlights the compare and contrast of your problem-solution work (the “before” and “after”).

## Math

- **Prove** Use coordinates to prove simple geometric theorems algebraically.
  - Alicia and Avery are best friends. They placed a map of their town on a coordinate grid and found the point at which each of their houses lies. If Alicia’s house lies at (9, 7) and Avery’s house is at (15, 9) and they wanted to meet in the middle, what are the coordinates of the place they should meet?
- **Apply** How can you use an equation like this to solve a problem in the design of your green space?
  - In what ways does this problem connect to other mathematical concepts?
  - Can you generalize the results from this problem/situation?

## Science

- **Read** the article about “happiness” brain chemicals and how to hack them.
- **Explain** how green spaces help us to trigger these neurotransmitters.
  - Write down 2 ways the utilization of green spaces helps to trigger each one of these neurotransmitters (dopamine, serotonin, oxytocin, endorphins).