



Wild Blue Yonder (Part 1) Activities

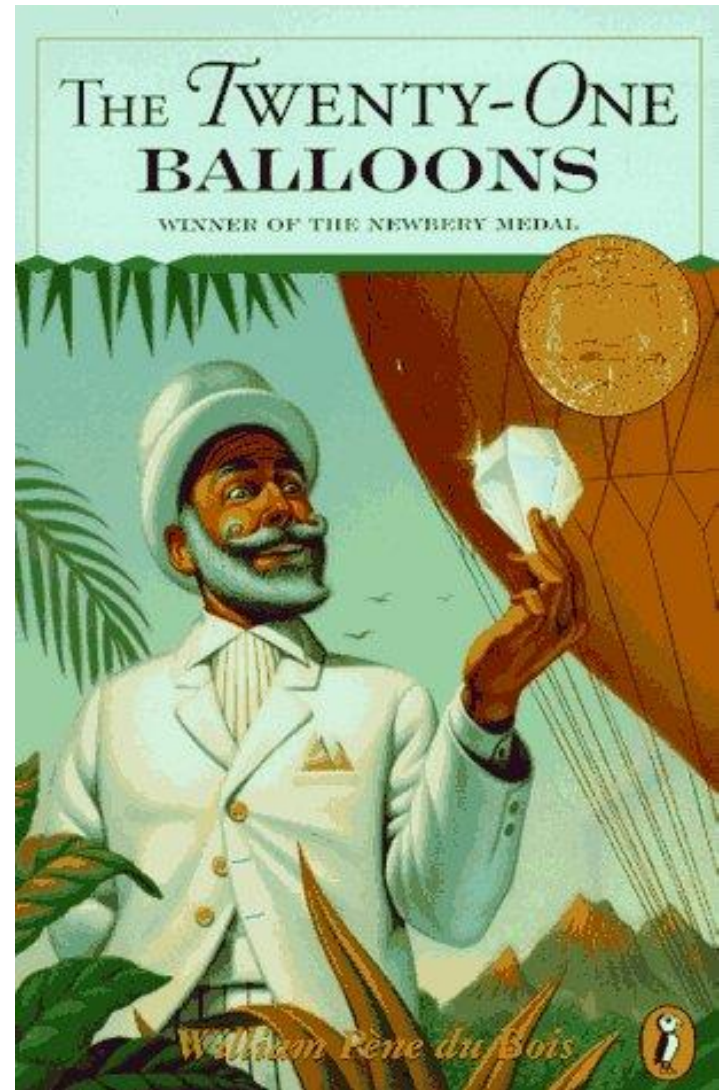
# The Wild Blue Yonder, p. 1

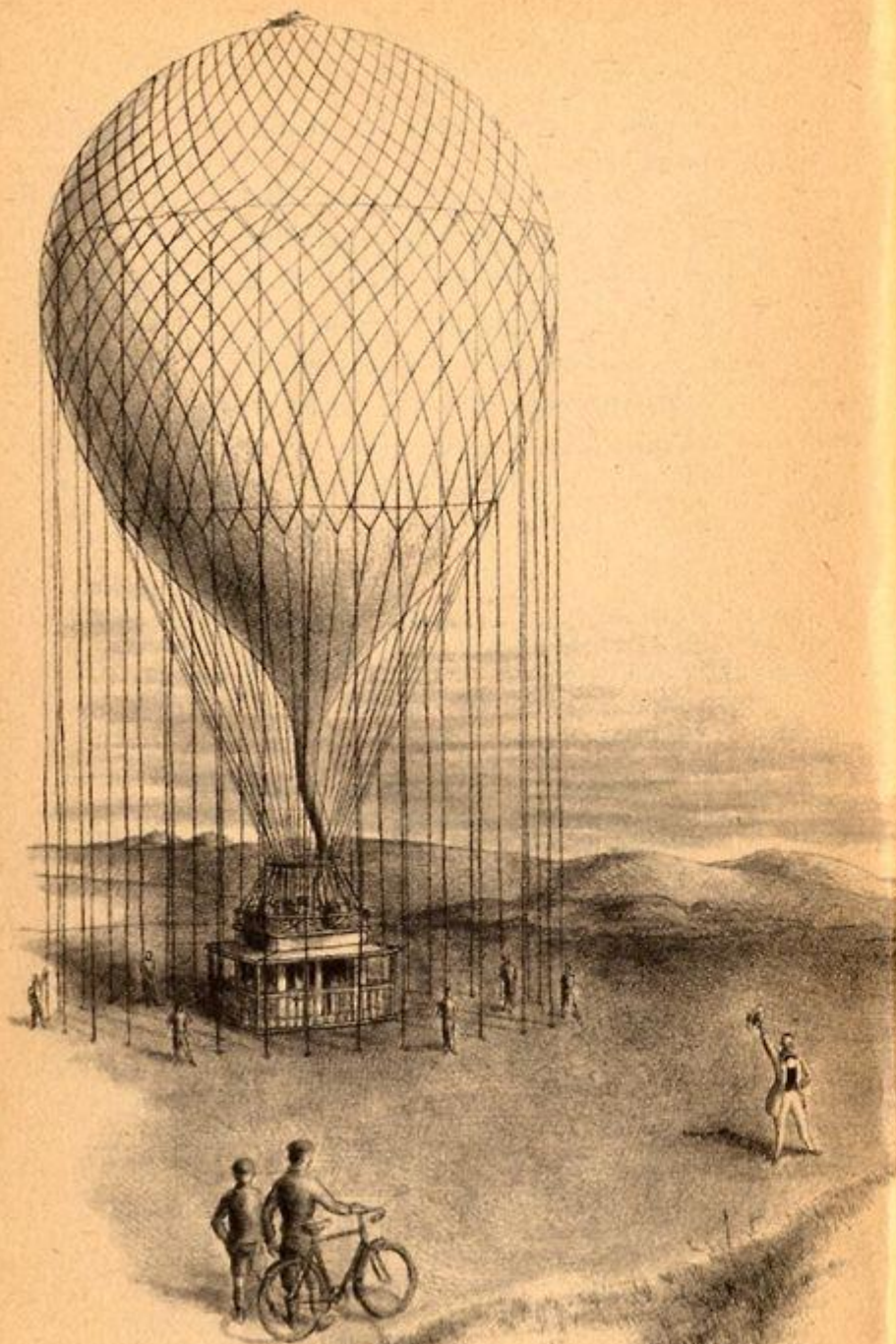


- *Intro (access prior knowledge)*
- *Video clips of hot air balloon rides.*

# Authors, they're full of hot air, p. 2

- Samples of books that mention hot air balloons
- Introduction to *The 21 Balloons* by William Pene DuBois
- Discussion of story elements & student predictions
- Reading of story introduction





*The*  
**TWENTY-ONE BALLOONS**

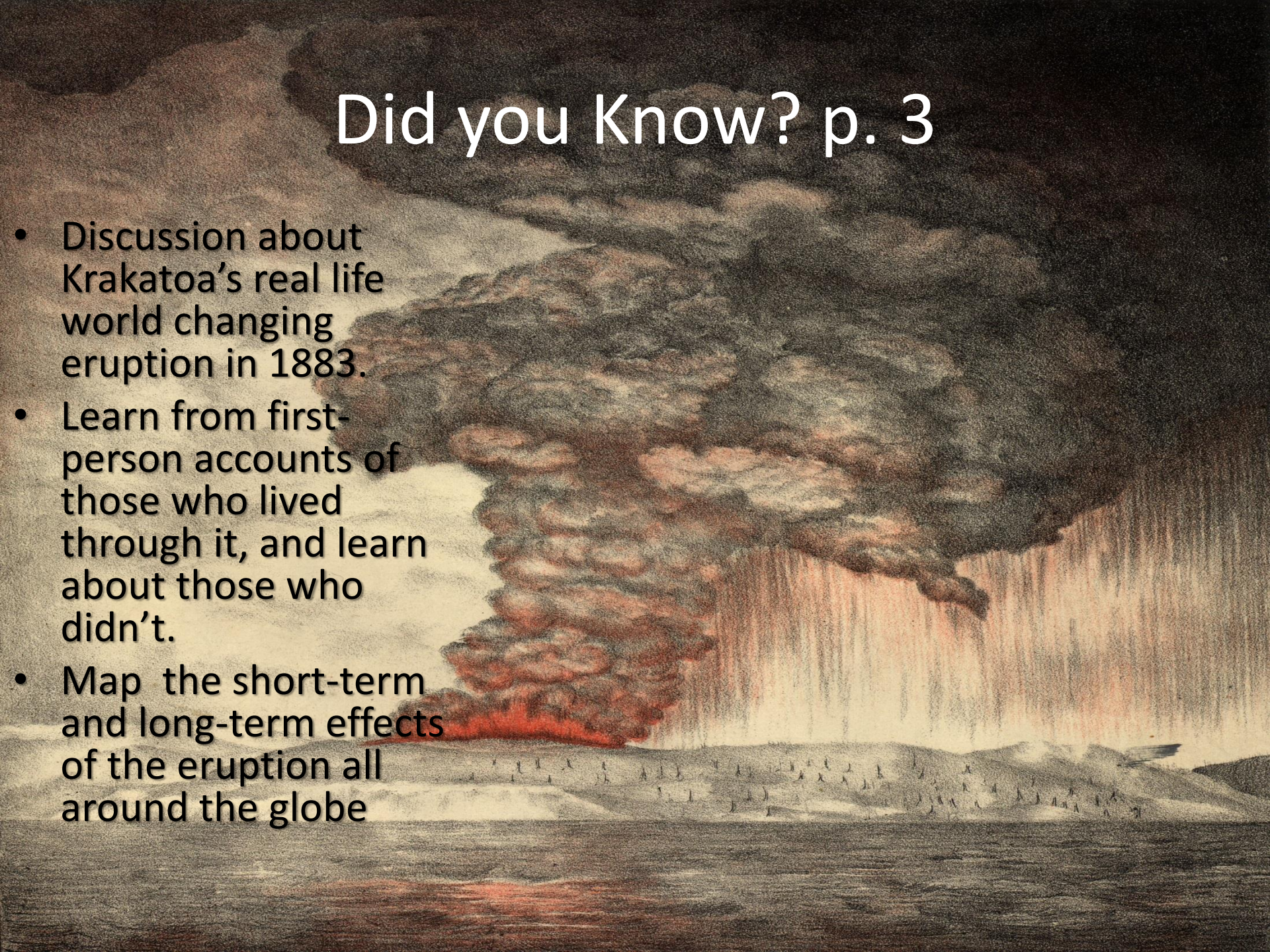
*Written and illustrated by*  
WILLIAM PÈNE DU BOIS

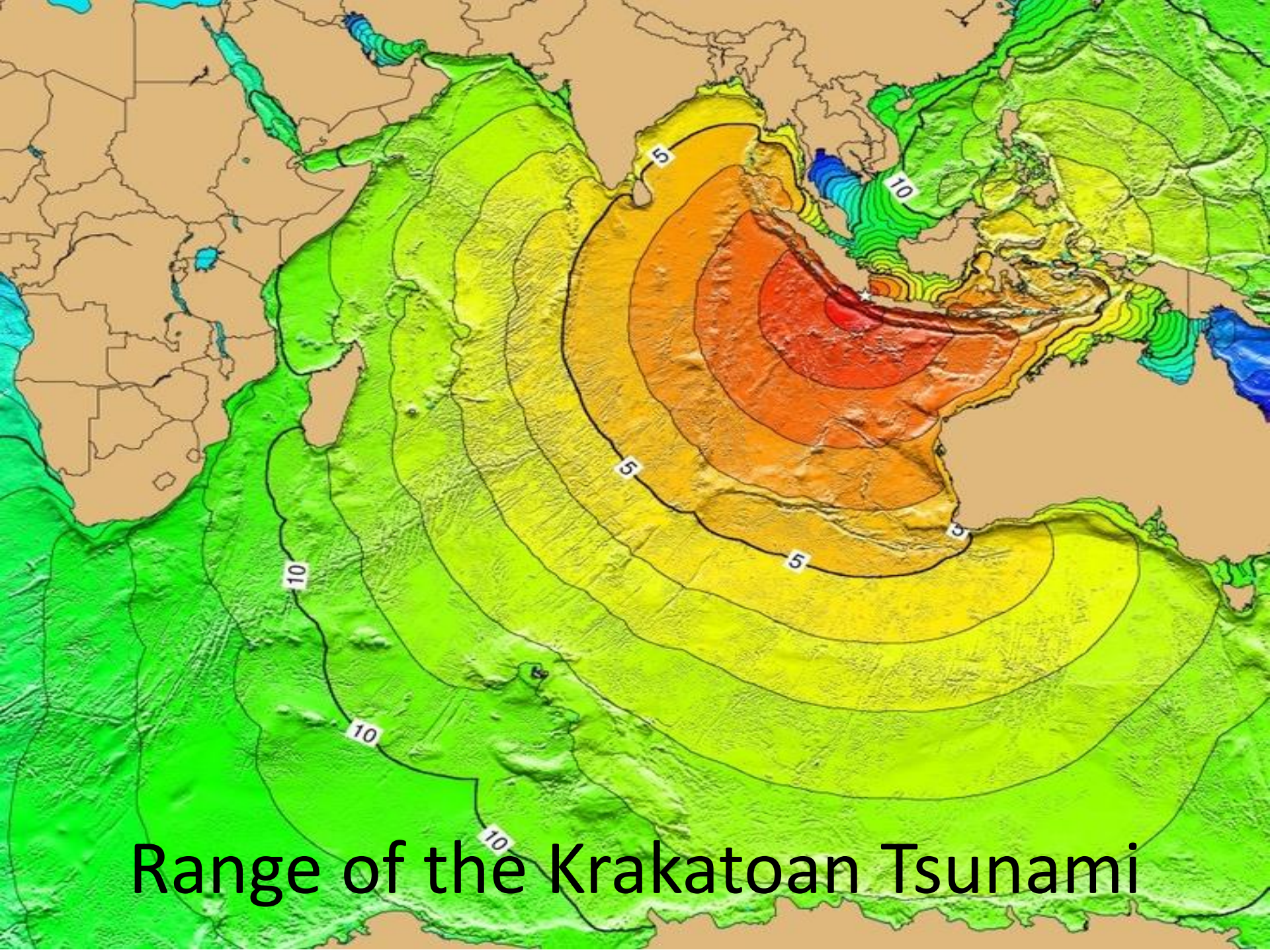


A YEARLING BOOK

# Did you Know? p. 3

- Discussion about Krakatoa's real life world changing eruption in 1883.
- Learn from first-person accounts of those who lived through it, and learn about those who didn't.
- Map the short-term and long-term effects of the eruption all around the globe











Range of the Krakatoan Tsunami

# Strategy Tips, p. 5

- *Tips on how to model thinking-aloud while reading to students*
- *Practice discussion and critical thinking skills*
- *Sentence starters poster to aid in discussion*

<h2>REMEMBER</h2> <p>Retrieve relevant knowledge from long-term memory.</p>  <ul style="list-style-type: none"> <li>• Can you recall...?</li> <li>• Where is...? Who is...?</li> <li>• Can you list four...?</li> <li>• How would you describe...?</li> <li>• How could you explain...?</li> <li>• Which of these is true...? false...?</li> </ul> <p>Showing Naming Listing      Restating Finding Recognizing      Choosing Matching Relating</p>	<h2>ANALYZE</h2> <p>Separate a whole into parts and determine their relationships.</p>  <ul style="list-style-type: none"> <li>• Why do you think...?</li> <li>• What is the relationship...?</li> <li>• Can you compare...? contrast...?</li> <li>• What idea is relevant to...?</li> <li>• How would you categorize...?</li> <li>• What can you infer...?</li> </ul> <p>Classifying Investigating Dissecting      Experimenting Dividing Discovering      Simplifying Differentiating Researching</p>
<h2>UNDERSTAND</h2> <p>Construct meaning from instructional messages.</p>  <ul style="list-style-type: none"> <li>• What is the main idea of...?</li> <li>• Can you find an example of...?</li> <li>• How would you summarize...?</li> <li>• What might happen next...?</li> <li>• How do you explain...?</li> <li>• What ideas or facts show...?</li> </ul> <p>Organizing Discussing Interpreting      Paraphrasing Extending Outlining      Reviewing Inferring Showing</p>	<h2>EVALUATE</h2> <p>Make judgments based on criteria and standards.</p>  <ul style="list-style-type: none"> <li>• Which is more important?</li> <li>• Is there a better solution to...?</li> <li>• Can you defend...?</li> <li>• What are the pros of...? cons...?</li> <li>• Why is... of value?</li> <li>• How would you feel if...?</li> </ul> <p>Validating Debating Assessing      Justifying Monitoring Prioritizing      Critiquing Selecting Rating</p>
<h2>APPLY</h2> <p>Carry out or use a procedure in a given situation.</p>  <ul style="list-style-type: none"> <li>• What would happen if...?</li> <li>• How could you clarify...?</li> <li>• Who do you think...?</li> <li>• Which approach would you...?</li> <li>• How would you use...?</li> <li>• What is a situation like...?</li> </ul> <p>Practicing Choosing Planning      Implementing Operating Developing      Interviewing Solving Generalizing</p>	<h2>CREATE</h2> <p>Combine elements or ideas to form a new whole.</p>  <ul style="list-style-type: none"> <li>• What is an alternative...?</li> <li>• Could you invent...?</li> <li>• Can you compose a...?</li> <li>• What is your theory about...?</li> <li>• How can you imagine...?</li> <li>• What could you design to...?</li> </ul> <p>Building Combining Formulating      Constructing Devising Improving      Changing Adapting Producing</p>

# Getting There, p. 6

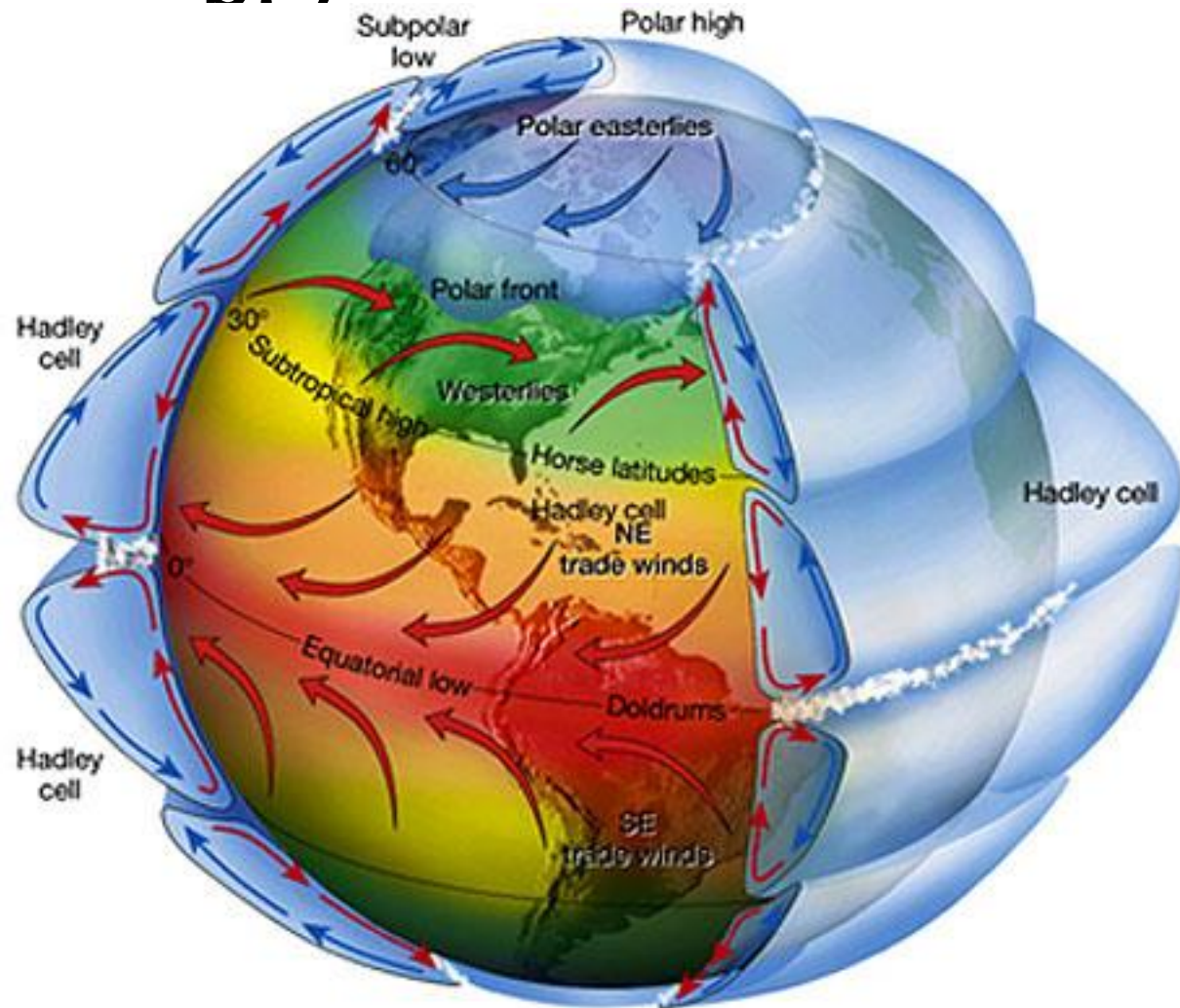


*Students begin construction of their literature trip, follow the Professor's journey, and begin to plan their own with information from what you've discussed and read using maps, globes, the internet, Google Maps, Google Earth, the novel, and more.*



# Warm Goes Up & Cool Comes Down, p. 7

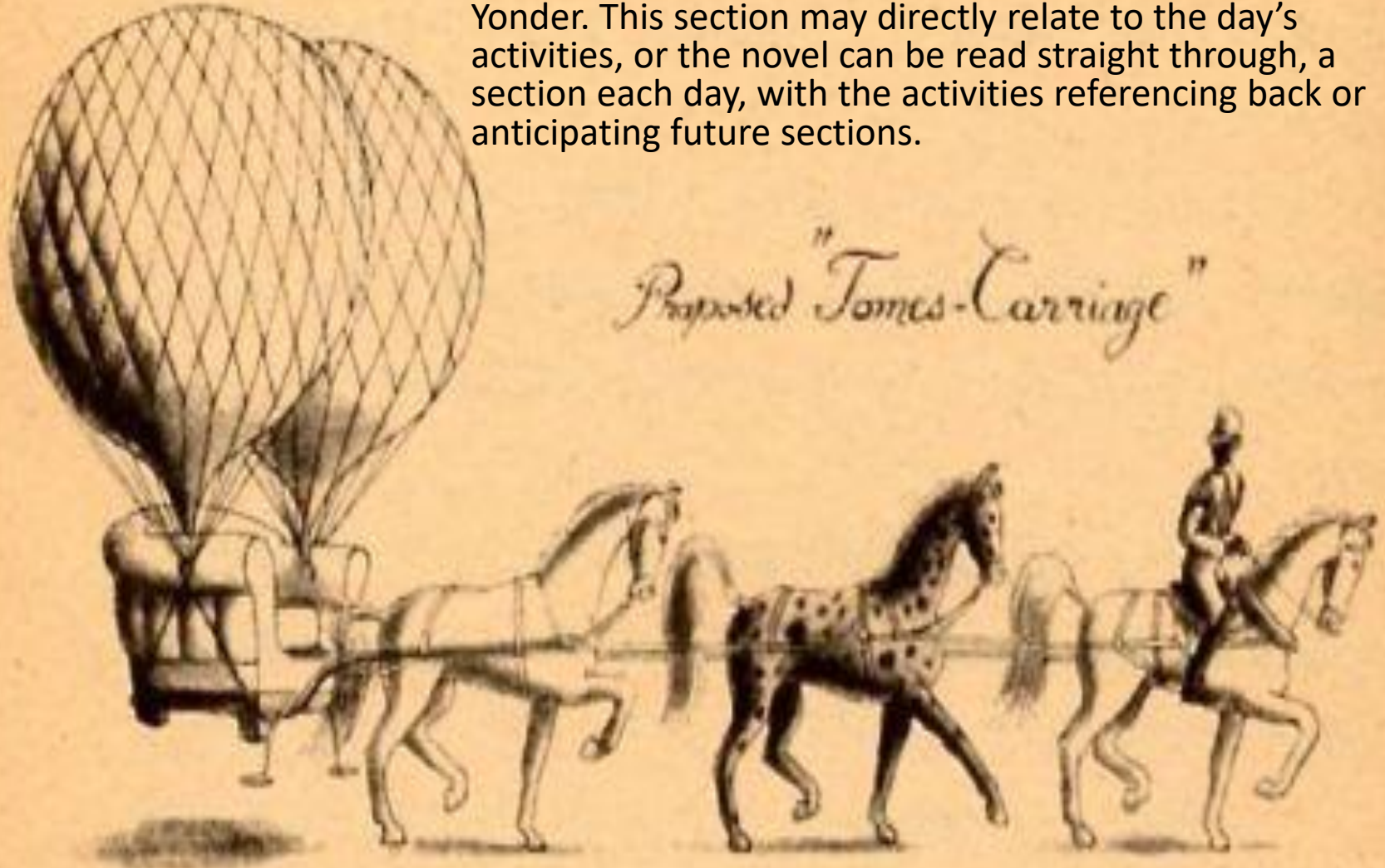
A short section where the class discusses earth's atmosphere and what factors affect air motion as you plan your lit trip.



# Read a section from *The 21 Balloons*

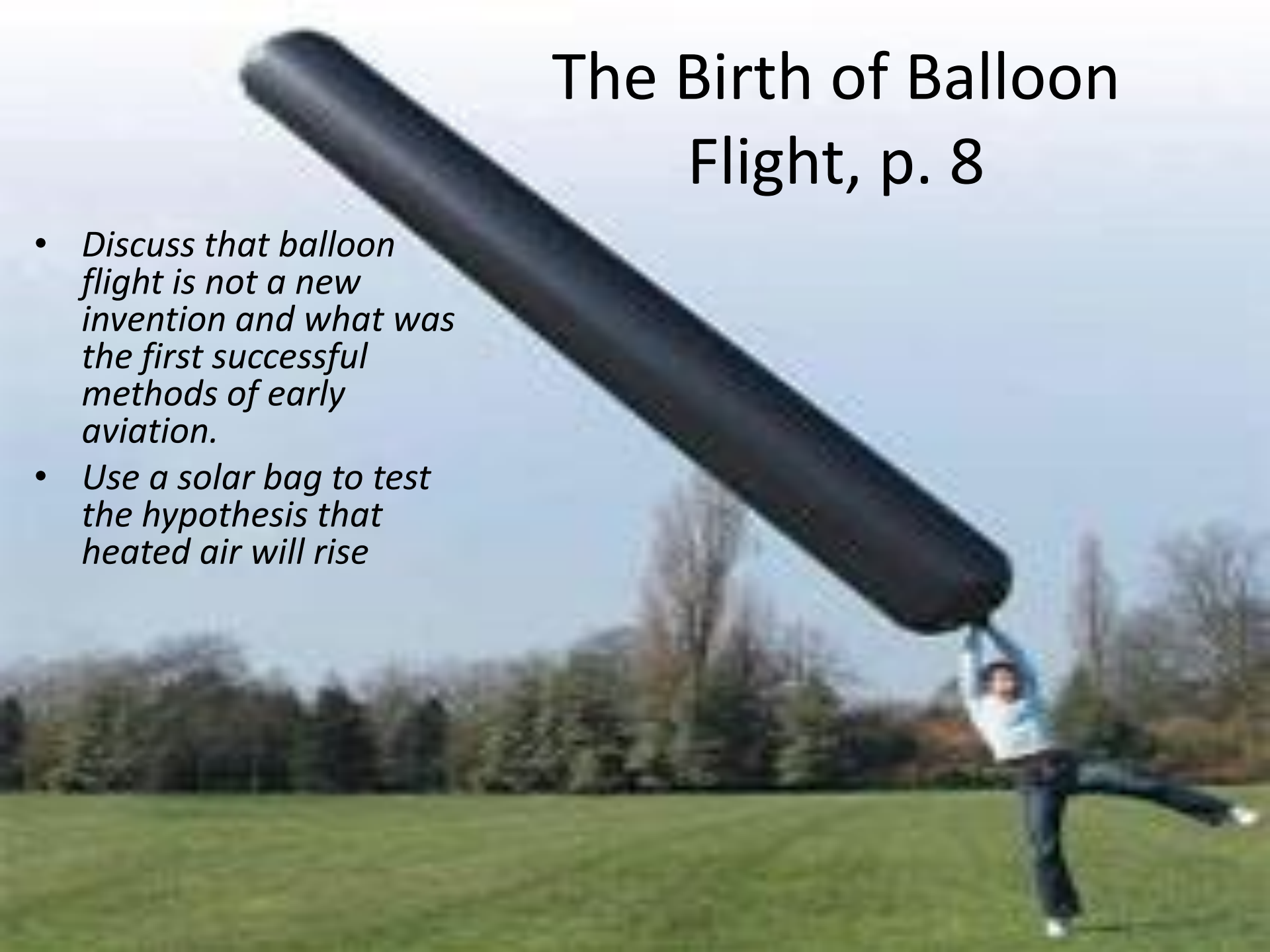
This takes place each day during all four units of Wild Blue Yonder. This section may directly relate to the day's activities, or the novel can be read straight through, a section each day, with the activities referencing back or anticipating future sections.

*Proposed "Jones-Carrriage"*



# The Birth of Balloon Flight, p. 8

- *Discuss that balloon flight is not a new invention and what was the first successful methods of early aviation.*
- *Use a solar bag to test the hypothesis that heated air will rise*



# The First Documented Hot Air Balloons, p. 9

- *Short discussion of Chinese sky lanterns*
- *Option: Demonstrate & decorate sky lanterns with students, if available*

# Hot Air Balloon History Hotly disputed & Nazca Lines, p. 10



*Discussion of how the claim for the first use of hot air balloons is hotly disputed, no pun intended.*

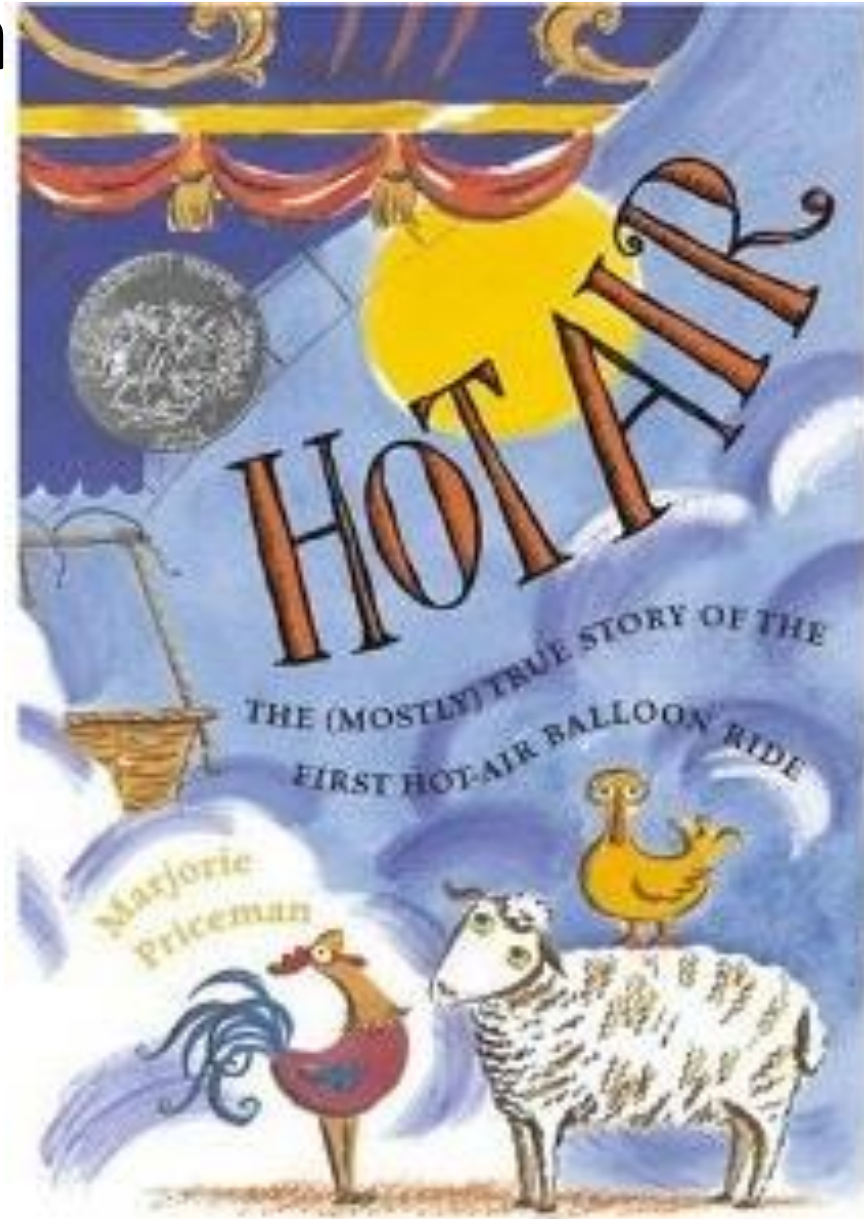
- A great mystery in the desert- was it created by balloon?
- Mapping locations
- Videos of how the lines were formed & interactive maps.
- Information to plan for our trip, how much it would cost to go and see the lines on our journey.



# A Sheep, a Duck, and a Rooster Hopped into a Balloon, p. 13

*Read and discuss with kids the book Hot Air: The (Mostly) True Story of the First Hot-Air Balloon Ride – written by Caldecott Honor-winning author Marjorie Priceman.*

*Compare and contrast it to the historical version contained within the unit's narrative.*



# The First Manned Flight, p. 14

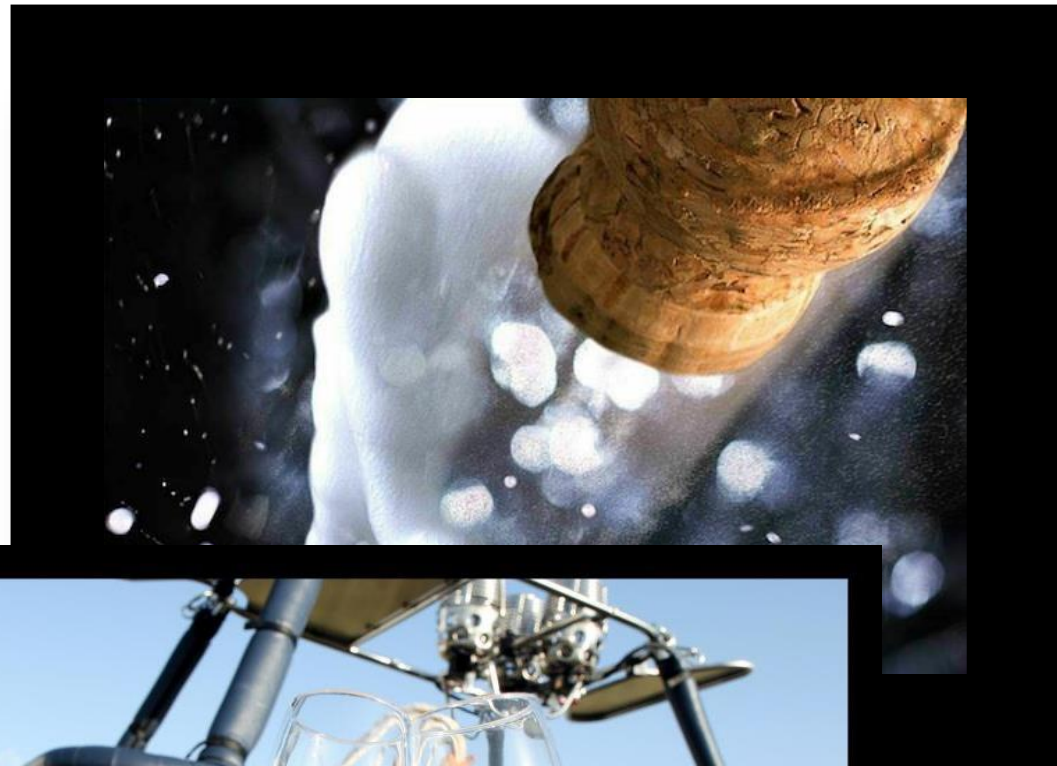


- *Discuss Pilatre de Rozier and Francious Laurent*
- *Map out the location*
- *Measure out 500 feet.*
- *Watch a video of a fictional recreation of the launch*



# The Birth of a Tradition, p.16

Discuss the humorous origins of the champagne tradition of ballooning and the modern twists around the world.



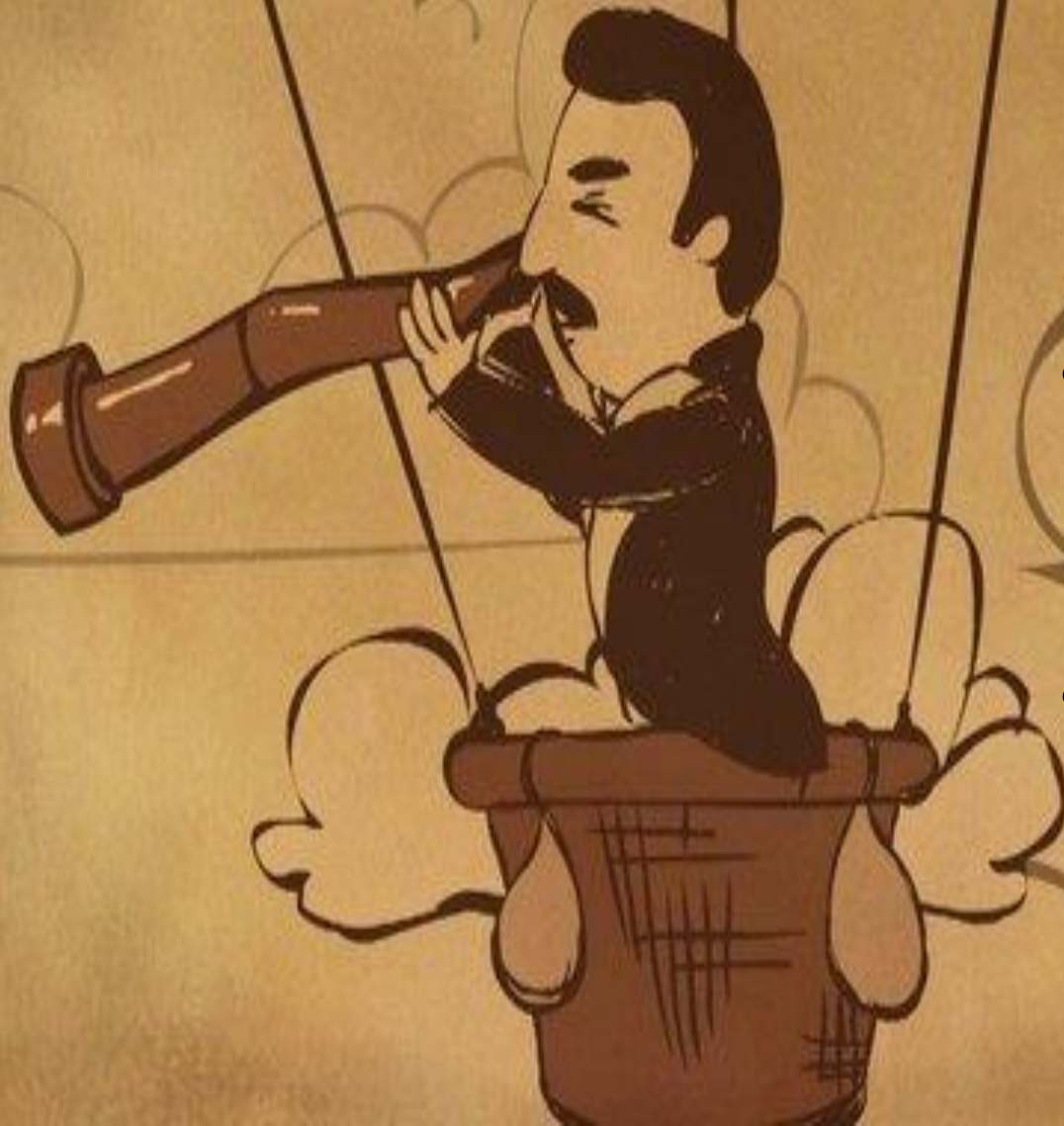
# Moving Up in Time, p. 17



- *Map, label, timeline, and discuss first flight across English Channel*
- *Death of Pilatre de Rozier*

*German Engraving Illustrating the Crash of Pilatre's Balloon, 15 June 1785*

# Lincoln's Flying Spies, p. 18



- *Short Humorous Film of the Ballad of Thaddeus Lowe*
- *Discussion of his exploits as Lincoln's balloon flying spy*

# (Quite) A Few Years Later, p. 19

- *Learn about records being broken in height, distance (across oceans!), and learn who did it and when.*
- *Map out locations and timeline dates*



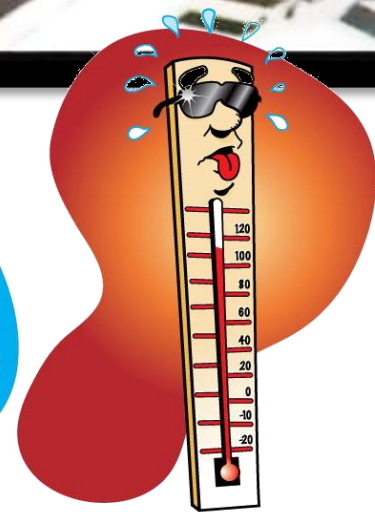
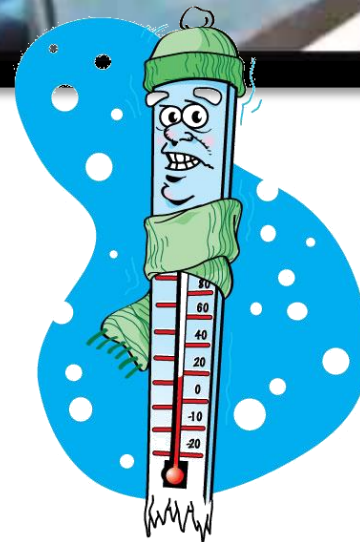
# All the Way Around the World? p. 21



- *Discussion of the completion of around the world record and all the effort that went into the other attempts*
- *Modern resurgence in interest in ballooning*

# How Do Hot Air Balloons Work? p. 21

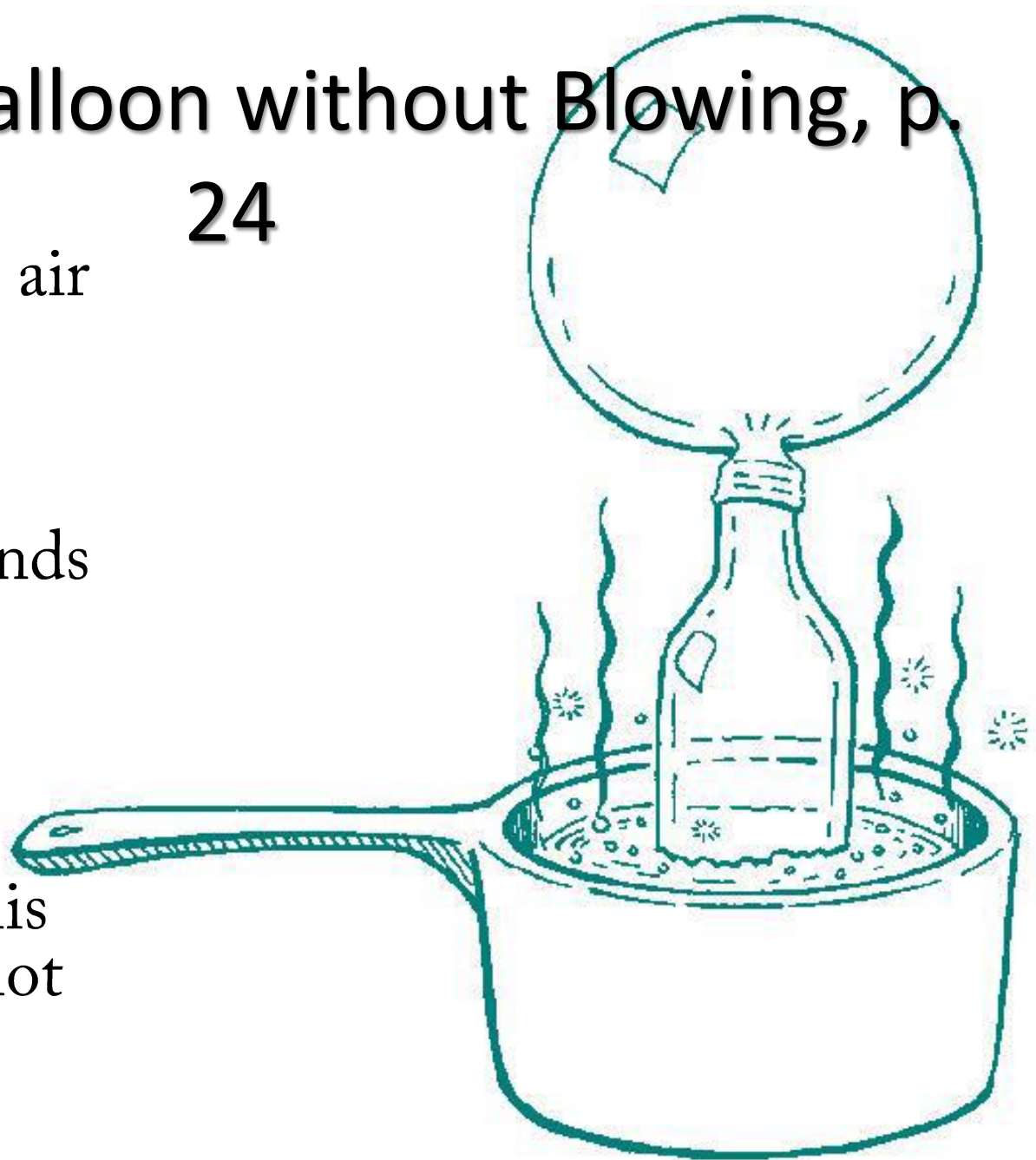
- Introduce section with *Rosie Revere, Engineer* by Andrea Beaty
- Basics of hot air balloon function
- Beginning of designing their own balloon
- Convection experiment
- Discussion of how hot air balloons work, ex. density and buoyancy



# Filling Up a Balloon without Blowing, p.

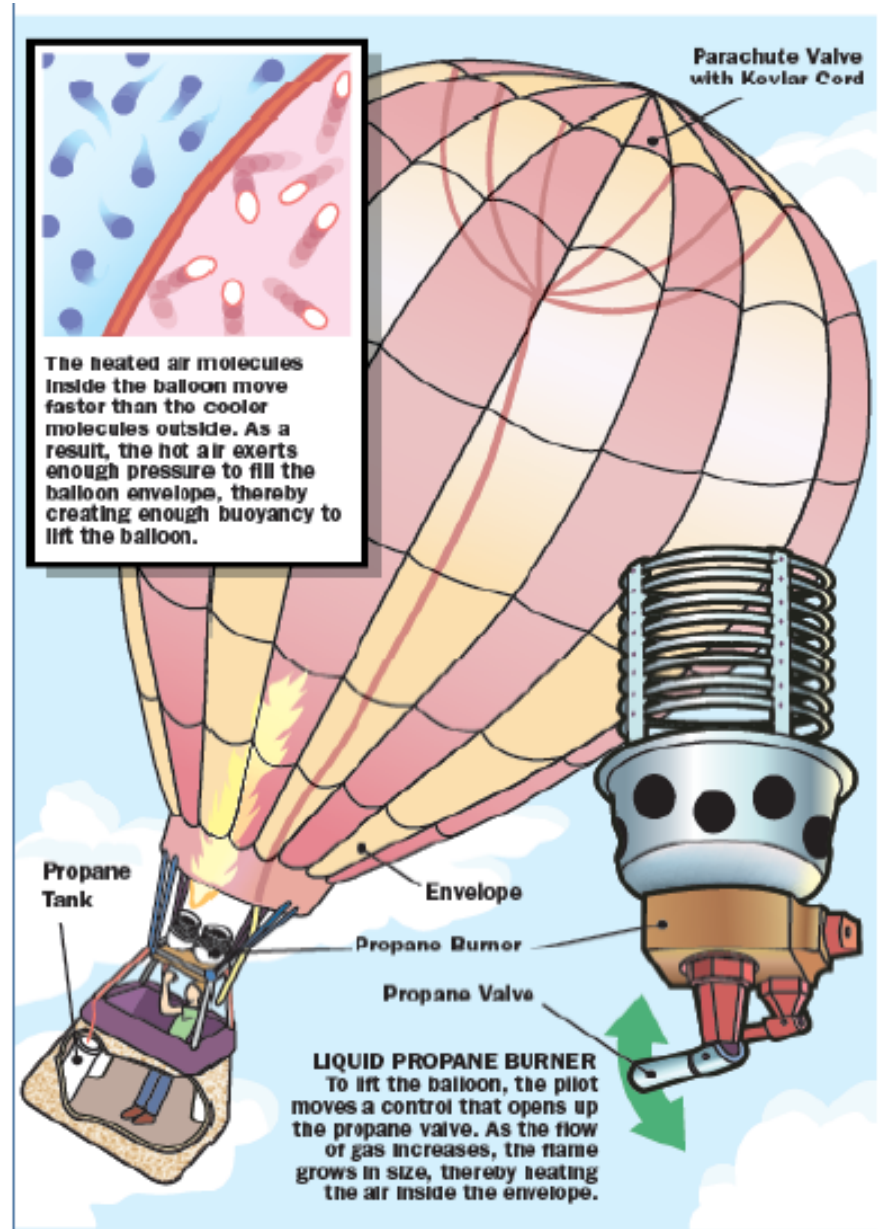
24

- Determine that air takes up space
- Discover that when air is warmed it expands and when it is cooled it condenses.
- Compare and contrast how this applies to real hot air balloons



# How long could a hot air balloon stay in the air? & Calculating Lift, p. 26

- Discuss density in and outside of the balloon
- Calculate how density and lift are affected by temperature

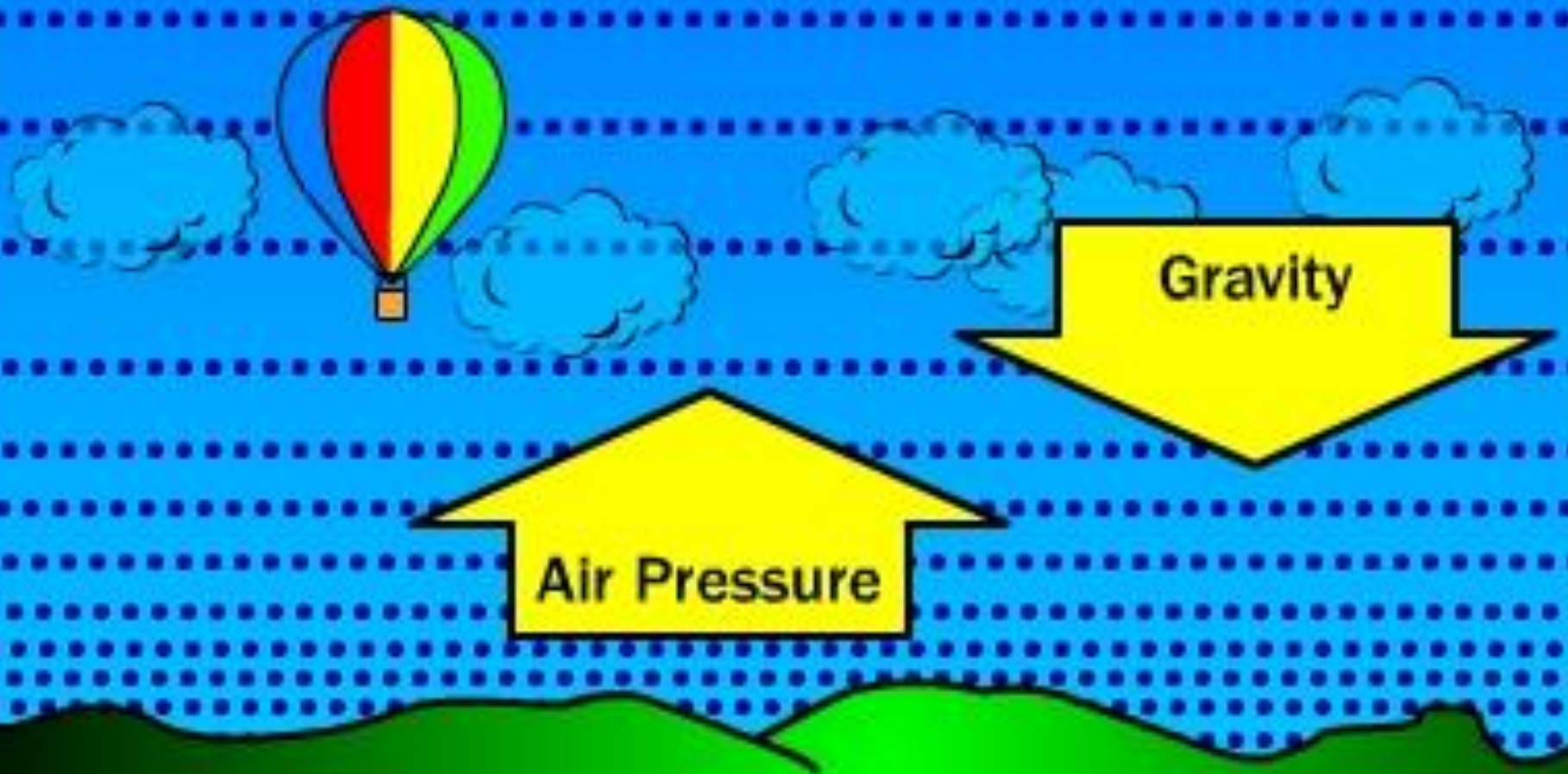


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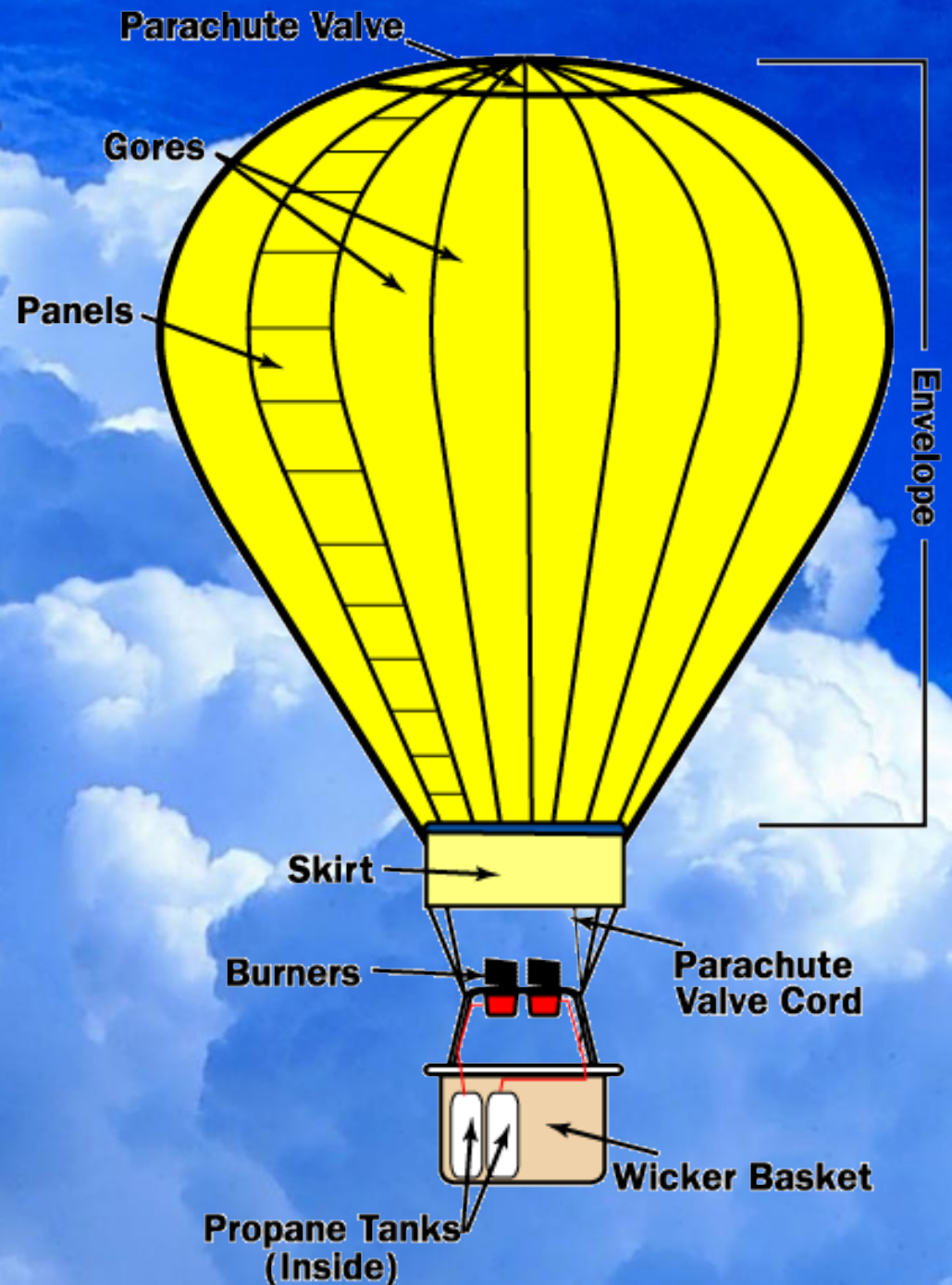


# Buoyancy, p. 28



# Rising balloons, p. 29

- *Compare and contrast the three types of modern hot air balloons*
- *Label the parts of a hot air balloon worksheet*



# Raising the Standard, p. 30

Learn the parts of a standard hot air balloon.



Photo by Lance & Erin



## Technology Link: Putting it All Together, p. 32

- *Watch and learn with Masha and Patsy of PBS' Dragonfly TV as they learn and travel on a hot air balloon!*
- *Play The Great Balloon Race! In this fun game students' challenge is to beat the other balloonists times by reaching the finish line without crashing!*



That was Part II!

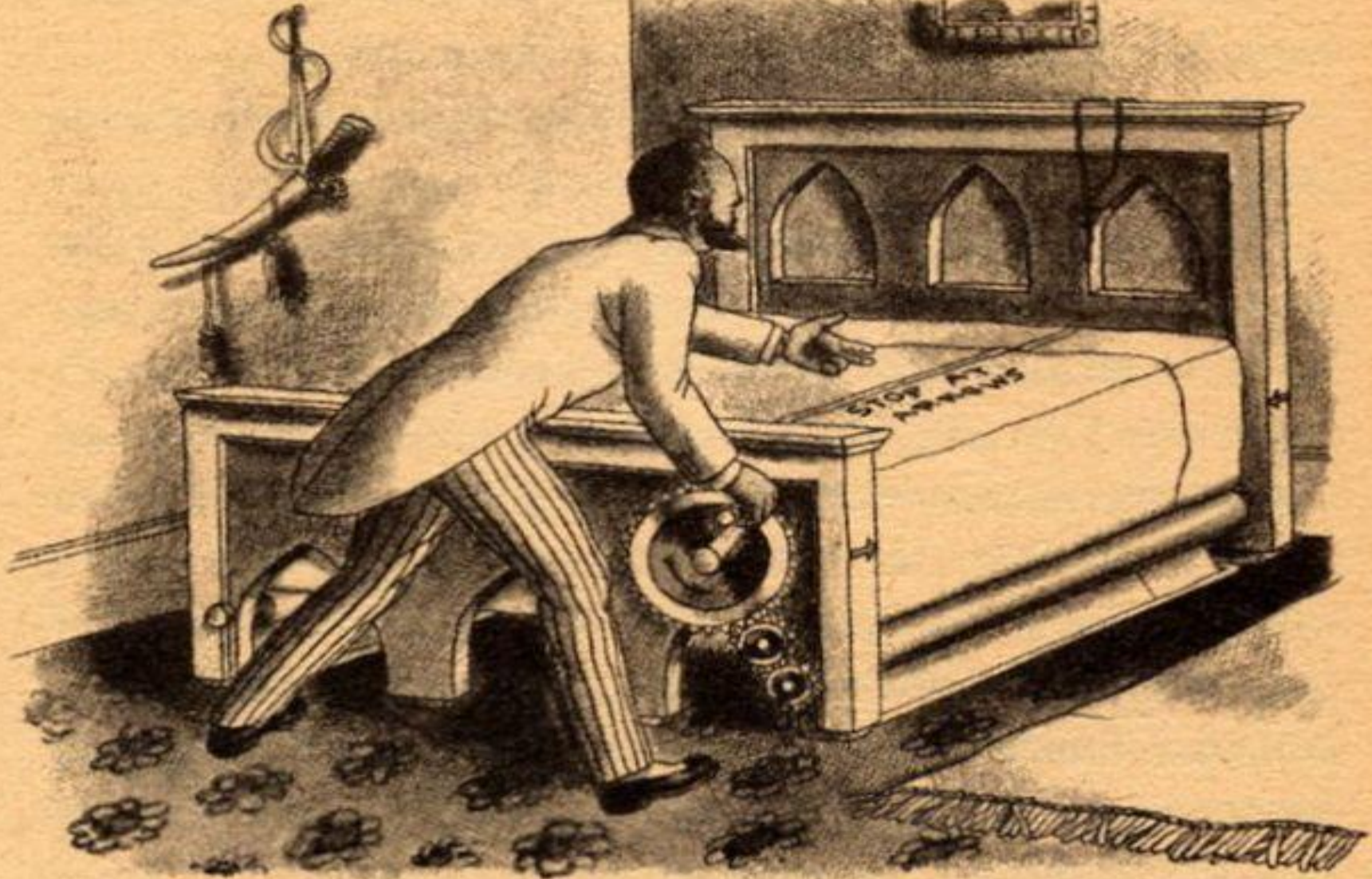


Now, on to part two,

Going Up!



# Read a section from *The 21 Balloons*

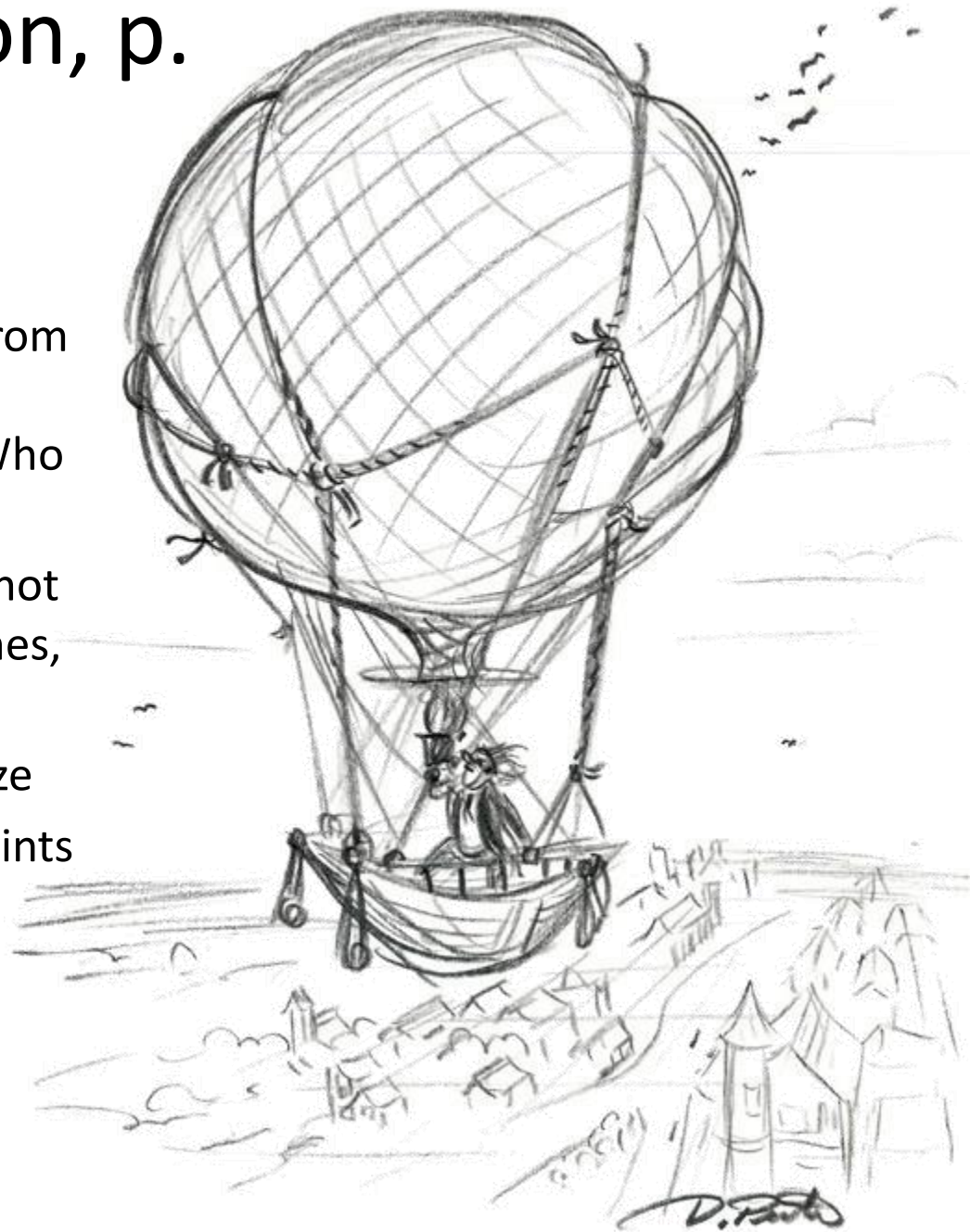


We're still reading! Remember, this takes place each day during all four units of Wild Blue Yonder and we are still building our lit trips & maps. The chosen section may directly relate to the day's activities, or the novel can be read straight through, a section each day, with the activities referencing back or anticipating future sections.

# Design Your Balloon, p.

## 1

- Inspire students with a video showing a plethora of designs from rockets to elephants, monster trucks, and even the Old Lady Who Lived in a Shoe!
- Look at images and galleries of hot air balloon designs, color schemes, and patterns
- Students choose a shape and size
- Discuss materials and design points to consider
- Start creating their own unique designs



# Rising High! Choosing Your Colors, p. 5

- Students create three separate balloon designs.
- Complete one original color drawing of their final balloon concept, including scale measurements.
- Discuss the difference between coloring a balloon and designing one.



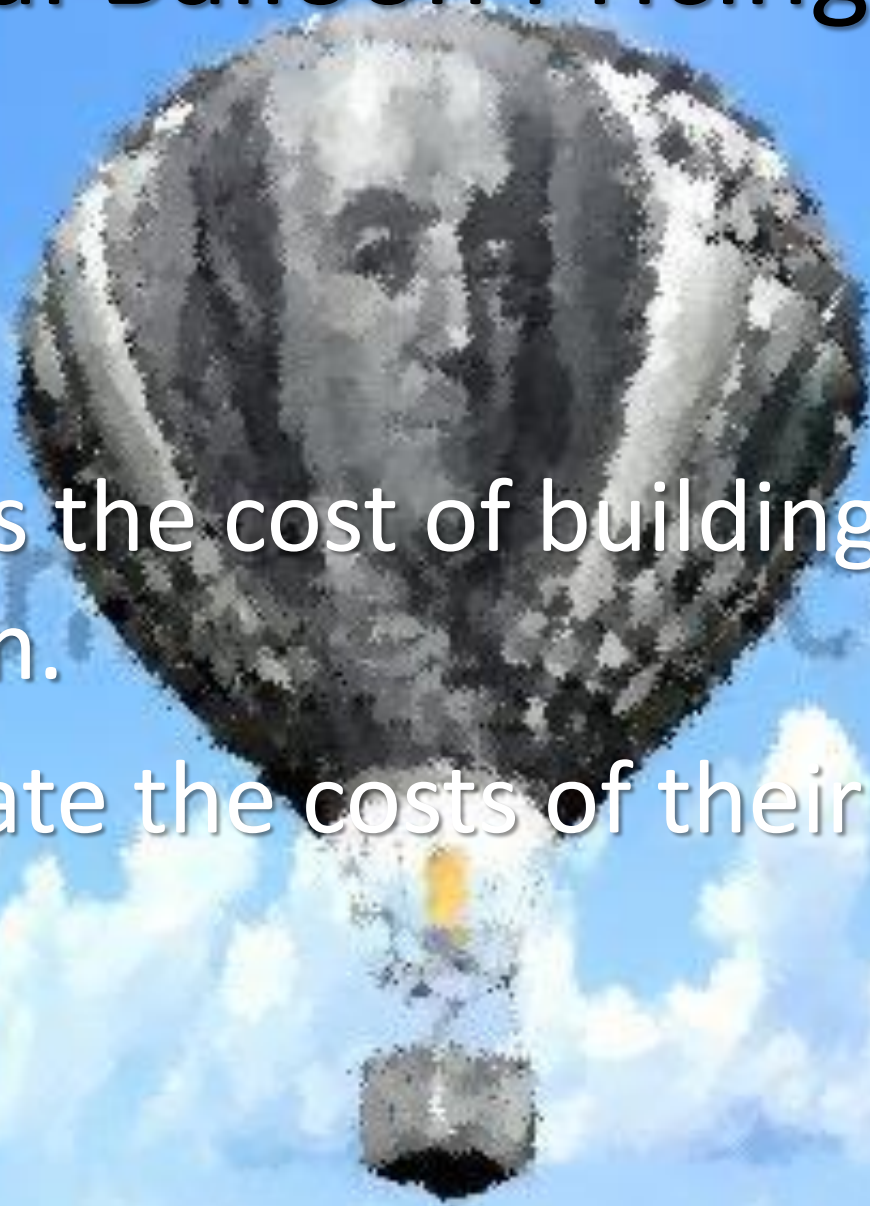


# Envelope sizing & Intended Use p. 6

- Plan what they plan to do with their balloon
- Answer questions about considerations of weight, temperature, altitude, distance, etc.
- Calculate the size of the balloon they'll need.
- Discuss types of fabric.

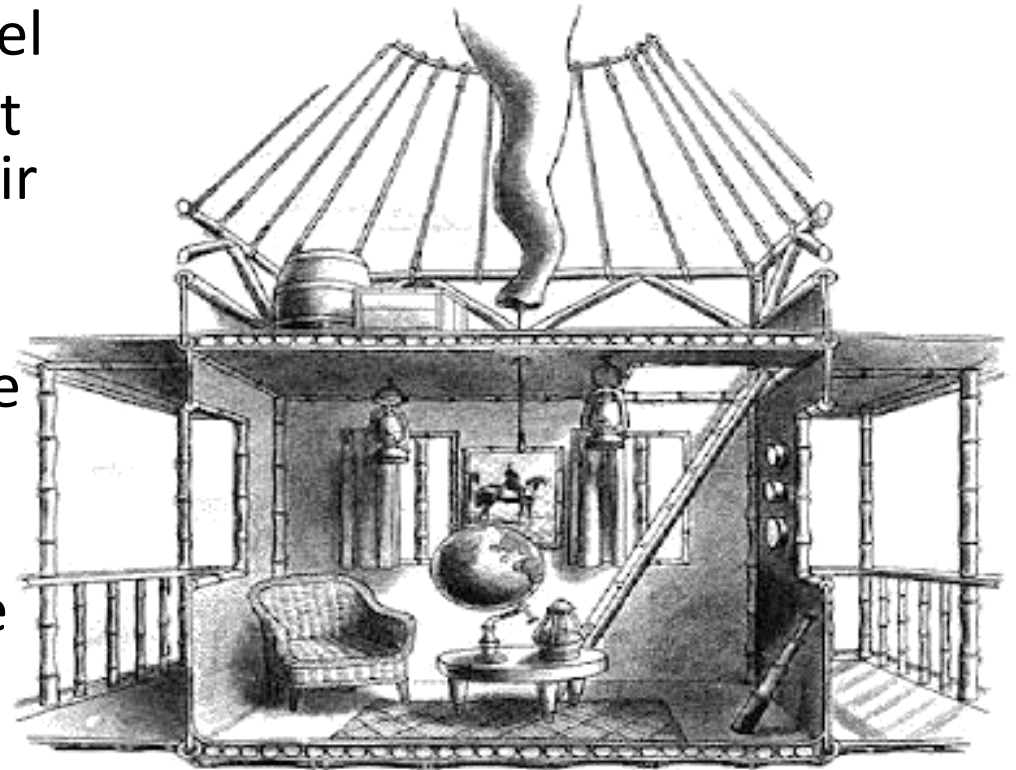
# Typical Balloon Pricing, p. 8

- Discuss the cost of building a balloon.
- Calculate the costs of their balloons.



# Design Your Wicker Basket Gondola, p. 9

- Relate it back to the novel
- Create a blueprint/layout including features of their basket gondola.
- Finalize designs and create a final color image
- Record reasons for choices in their journal.
- Calculate square footage and possible weights (amend price calculations)





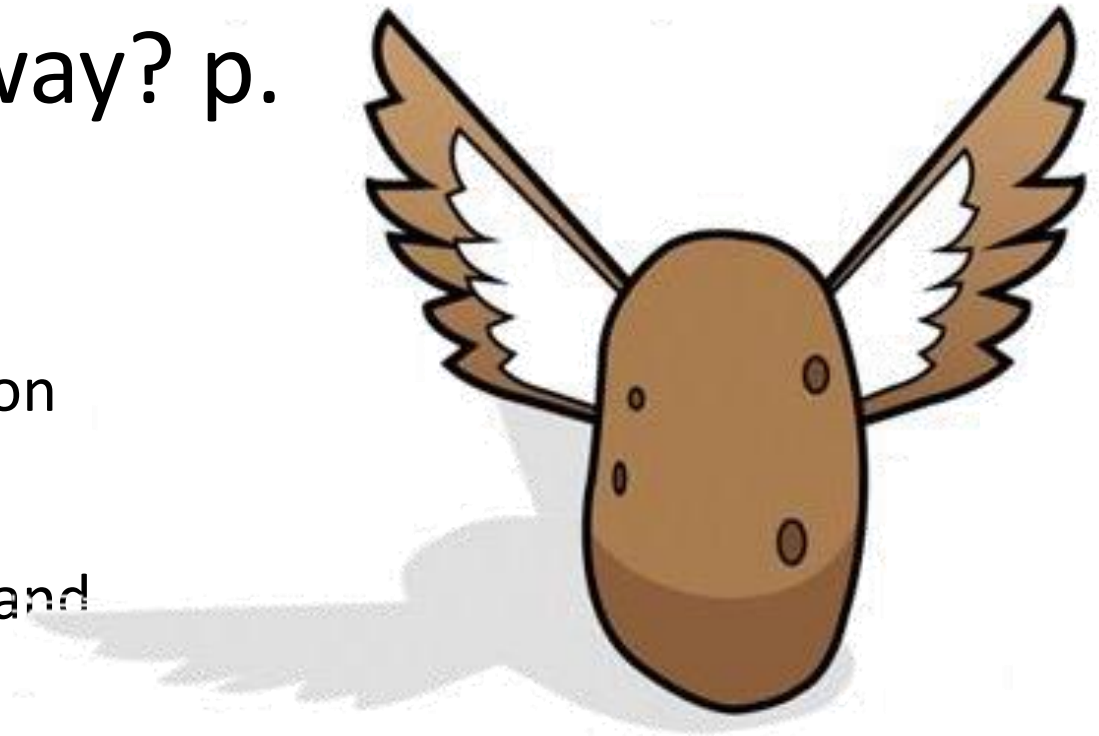
# Way Above Water Basket Weaving, p. 12

Students design, measure, and create a faux wicker basket as an apprentice basket weaver.



# Up, Up, and Away? p. 19

- Explore the mini-helium-balloon option instead of hot air balloons.
- Perform the potato and helium balloon experiment! Can students make a sack of potatoes float using only helium, balloons, and string?
- Relate it back to the novel...see box.



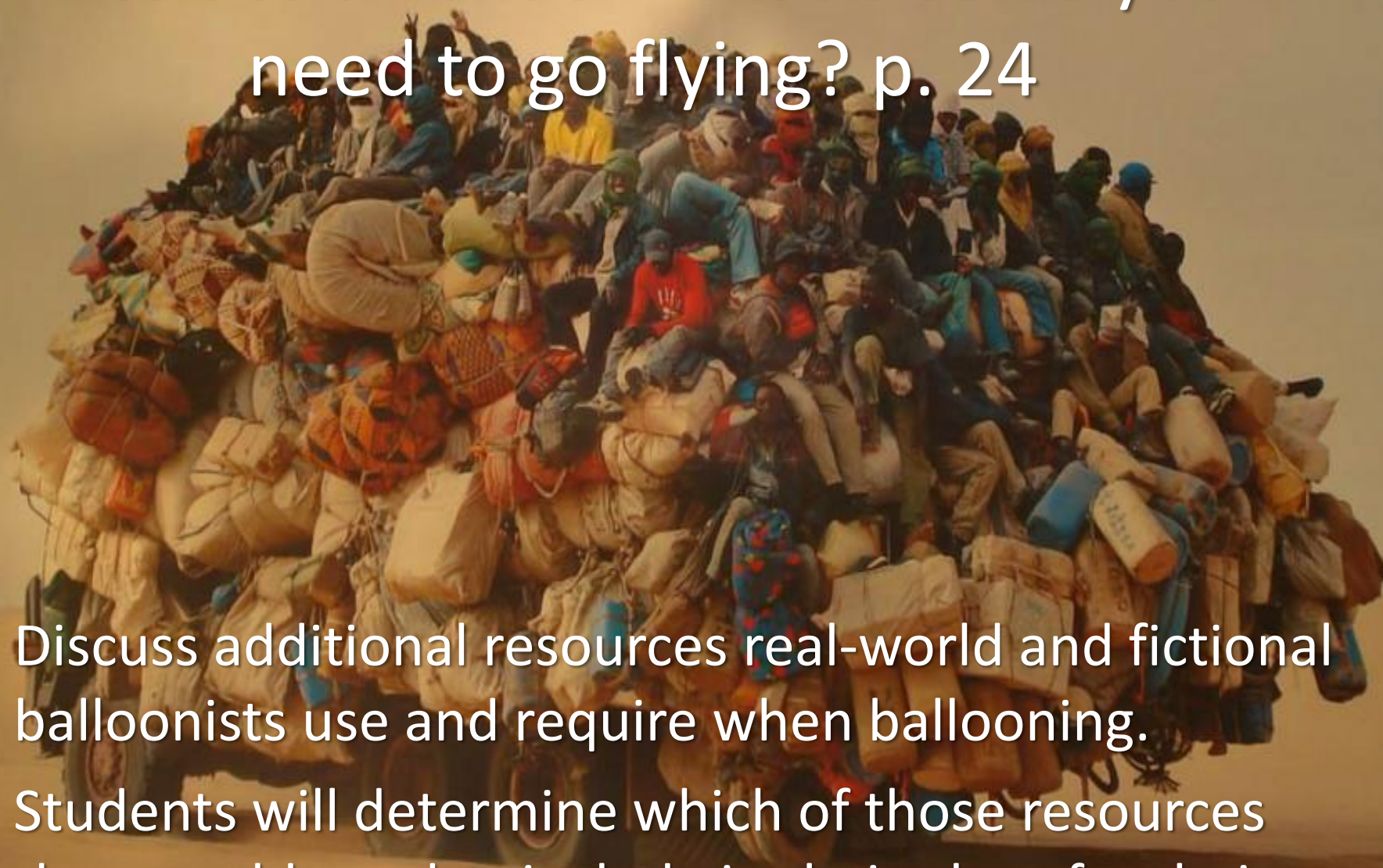
When the Professor got back to the United States, he had a hard time walking, what did the people do for him? They made him a floating chair using helium balloons. (p. 26-28) How many balloons would you need to make a chair (with the Professor sitting in it) float? What happened to the chair? (p. 30-31) What happened to the little boy who tied the helium balloon around his waist in the story? What was the difference between his experience and his little brother's? (pages 21-22)

# Going Up? p. 21

- Discuss the real-world logistics of the movie Up!
- Watch the video of the real-world engineer-built version of the Up! House & discuss.
- Discover the process for mining and storing helium and why the US government has a monopoly.



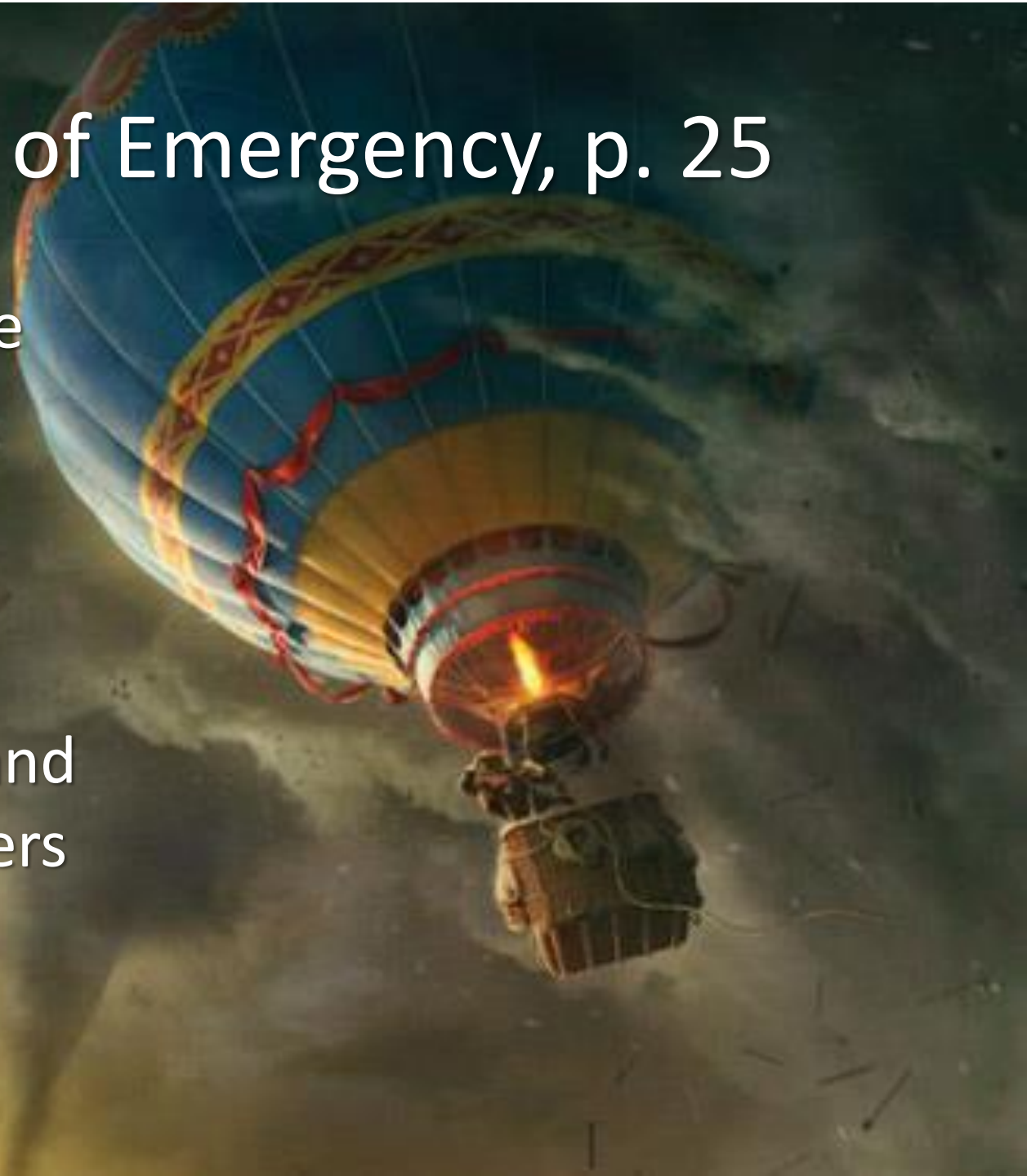
# Besides a Balloon what else do you need to go flying? p. 24

- 
- A large group of people, including men, women, and children, are sitting on a massive pile of supplies and gear. The pile is composed of numerous bags, blankets, and containers, suggesting a large-scale migration or a long journey. The scene is set in a desert environment with a clear sky.
- Discuss additional resources real-world and fictional balloonists use and require when ballooning.
  - Students will determine which of those resources they would need to include in their plans for their literature trip.



# In Case of Emergency, p. 25

- Determine the safety precautions necessary to travel safely
- Discuss past and present dangers of ballooning



Riding the Wind, p. 27

Discuss and discover the boon and bane of ballooning, wind. It's powers and it's perils.



That was Part 2!



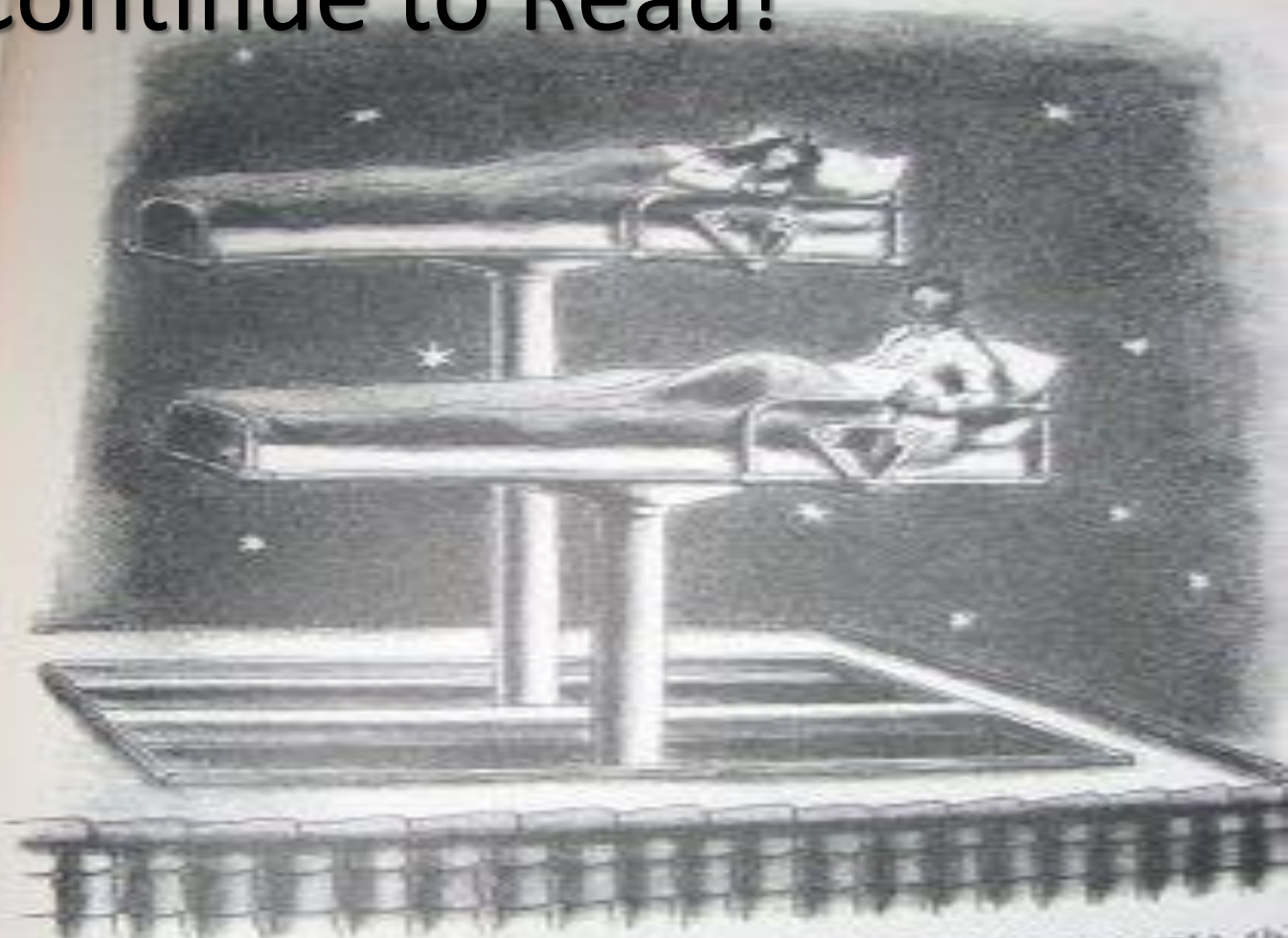
Now, it's time to take flight with part three,

Preparation is a Breeze!

# Continue to Read!



to M-1 and M-2 like?  
beds with continuous  
ie chairs and table  
signed beds of their  
and move up and  
the upstairs room  
ove their beds at  
ights at the stars;  
e right up on the  
of is at



beds right through the floor of their bedrooms into the  
bathrooms below. We are having a hard time deciding  
what sort of bed we are going to install in our own house  
the bed with the continuous sheets of Mr. and Mrs. M.  
the elevator bed of M-1 and M-2. Both models have many  
you will have to agree.

# Preparation is a Breeze, p.

## 1

- Read a fun introductory picture book.
- Create list of supplies and equipment needed for the trip.
- Calculate the weight of their total cargo and determine balloon size.
- Finalize a drawing of their balloon design and add notations of calculated dimensions .
- Calculate weight estimates for supplies.



# Building a prototype: YOUR first Balloon!, p. 3

## Spread out over several days:

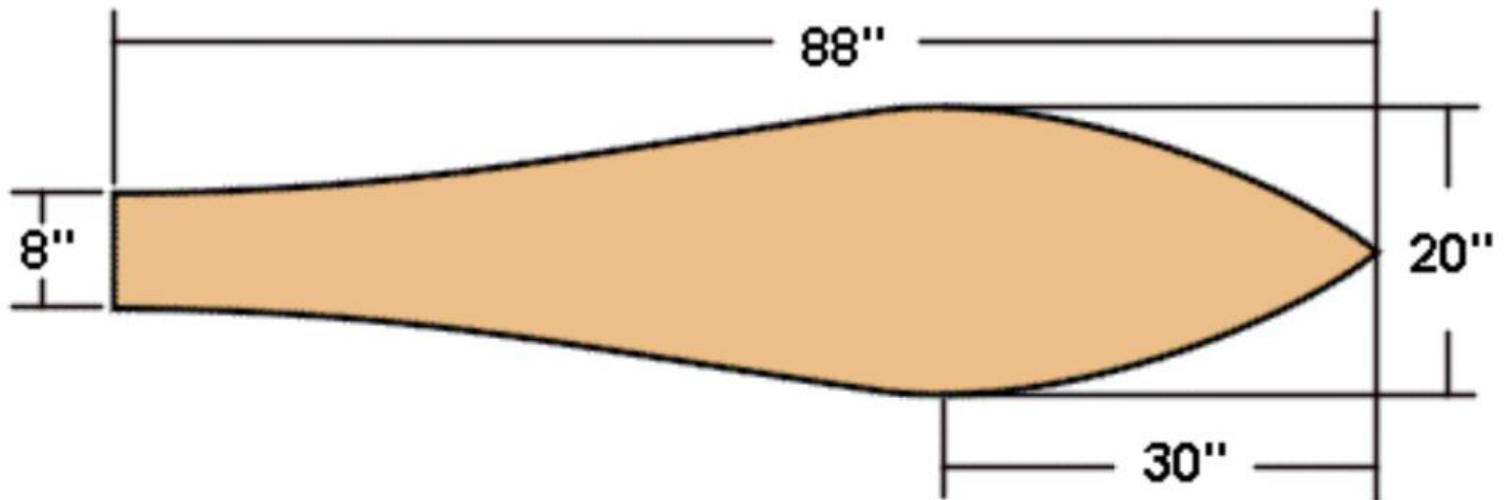
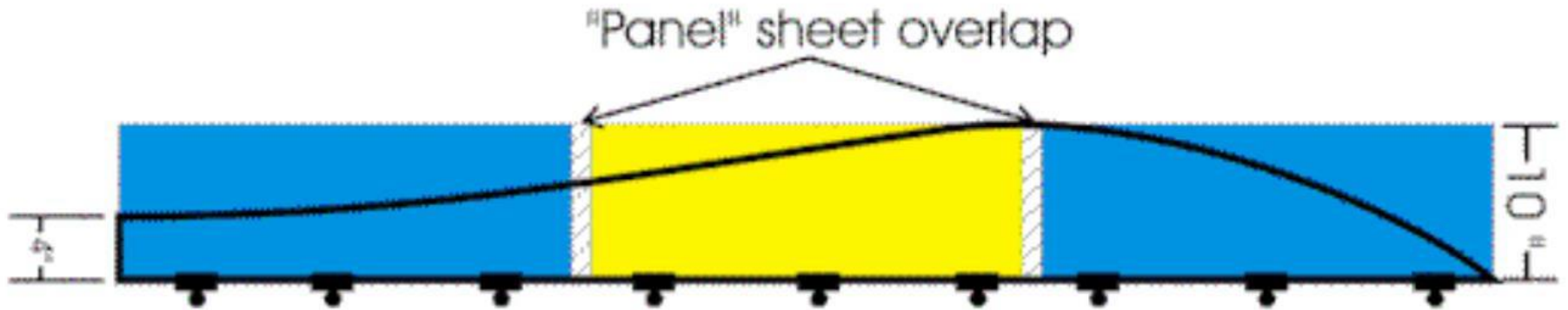
1. Begin to measure, cut, and glue the first tissue paper balloon elements: gores! A lot of critical thinking and planning takes place at this stage.
2. Cut gores into leaf shape, decorate, and double-check patterns, redesign or re-order if necessary.
3. Begin constructing balloon envelope, glue, and test for holes.
4. Finalize construction of balloon envelope and test for holes and weak seams.

Making Gores = Strips of 3 (or 4 or more)



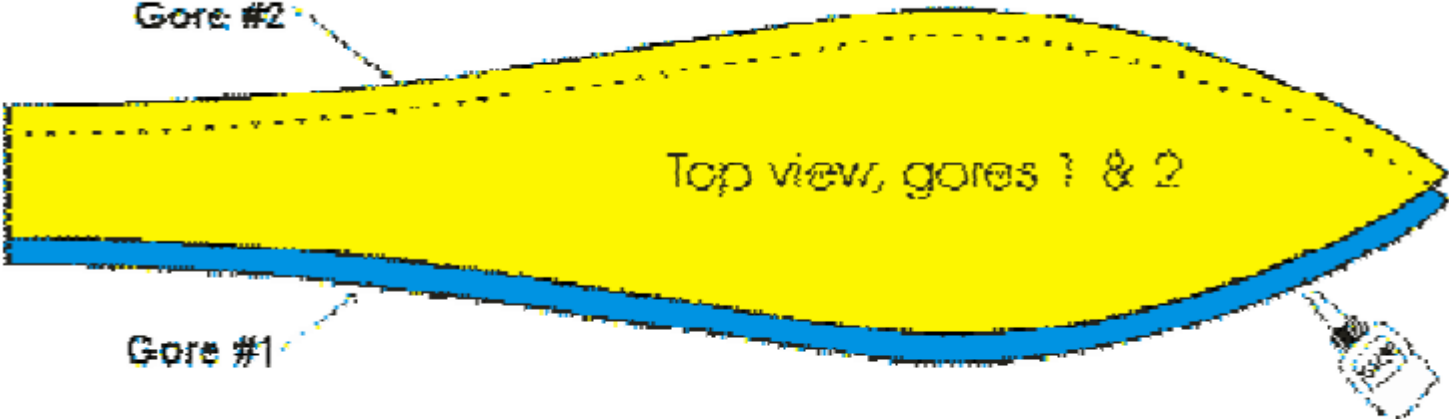
We'll make 8 of these...

# Shaping the Gores= Fish or Leaf Shape

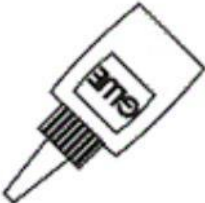




# Join the Gores!=Glue, Fold, Glue, Fold...



End View  
Gore #1 & #2



End View  
Gore #1 & #2

Fold Over

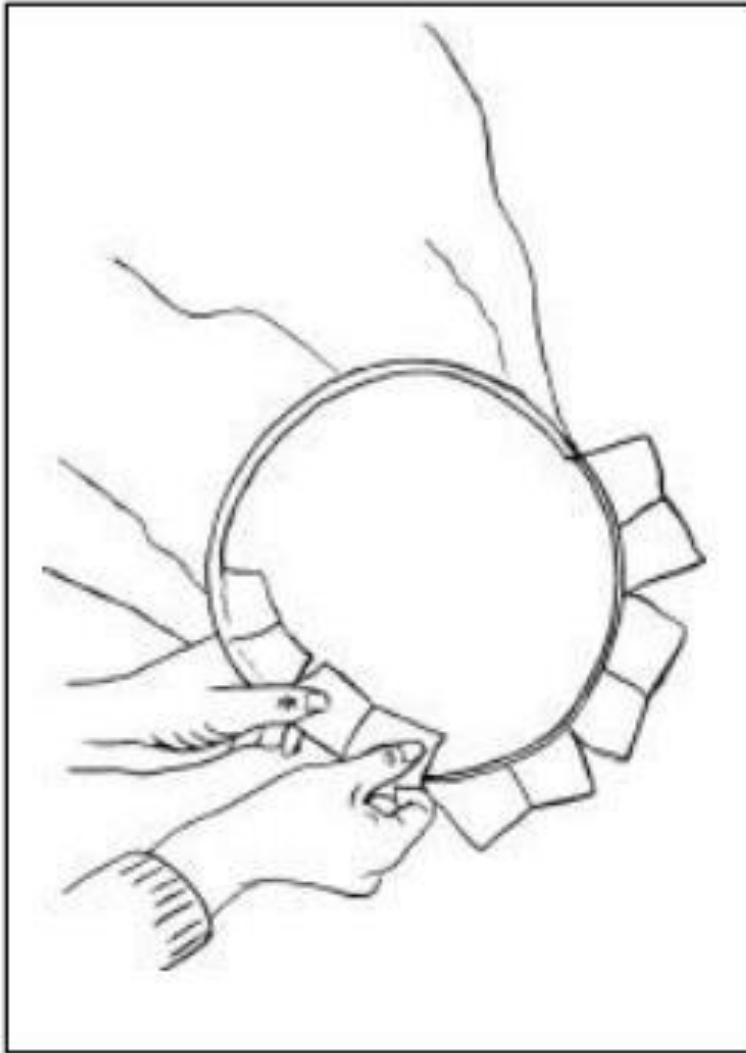


# Make it Fancy!

**This would be the point where students could add on any tissue paper decorations to accentuate the theme of their balloon.**

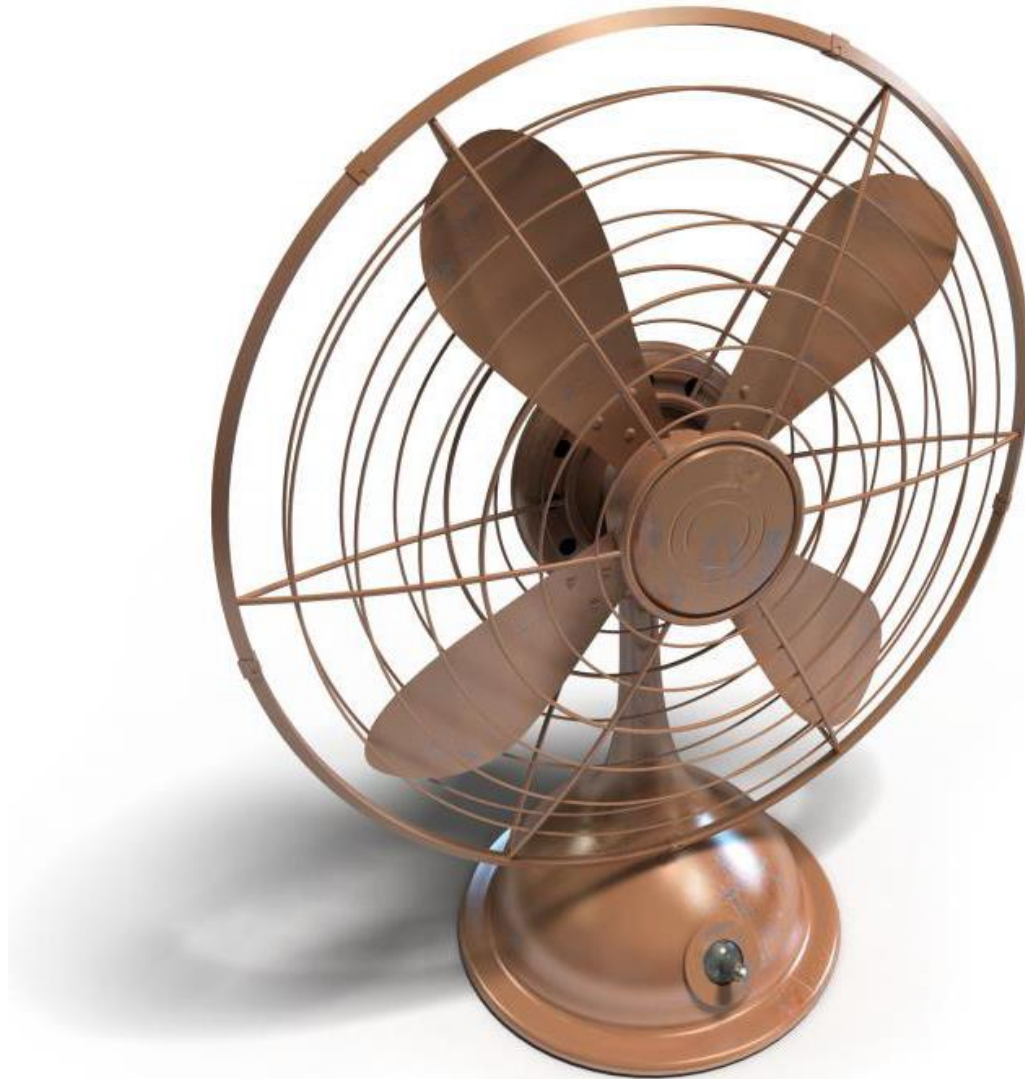


# Support the Throat



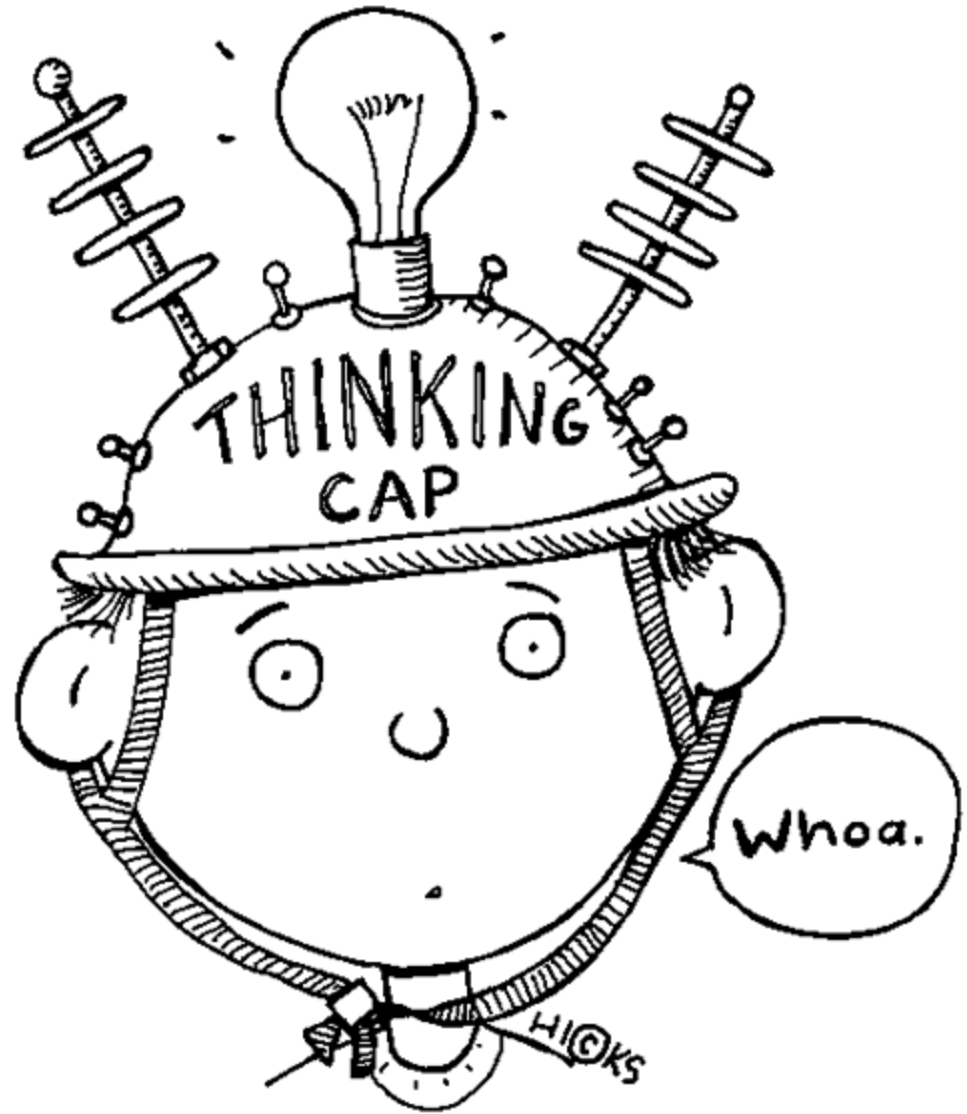
1. Get 9 feet of Drywall Tape.
2. Fold the tape in half and staple it or glue it to itself.
3. Now, make a 12 inch diameter circle. Staple it into that shape.
4. Tuck it into the throat and fold the tissue paper up and around it. (Make pleats or just crumple it up and around)
5. Staple the tissue paper

# Checking for Holes



# What's in a Name?, p. 7

Students learn about the tradition of naming balloons and other traveling vessels, learn some historic and modern balloon names, and come up with a fun and memorable name for their balloon!





# Hot Air Buffoon: The Pun Also Rises

p. 9

Discuss what a pun is and explore variations  
Create a pun name for their balloon  
Expose students to some puns, there are many possible reference sources such as Dear Deer: A Book of Homophones, Eight Ate: A Feast of Homonym Riddles, Analyze good and bad puns with them

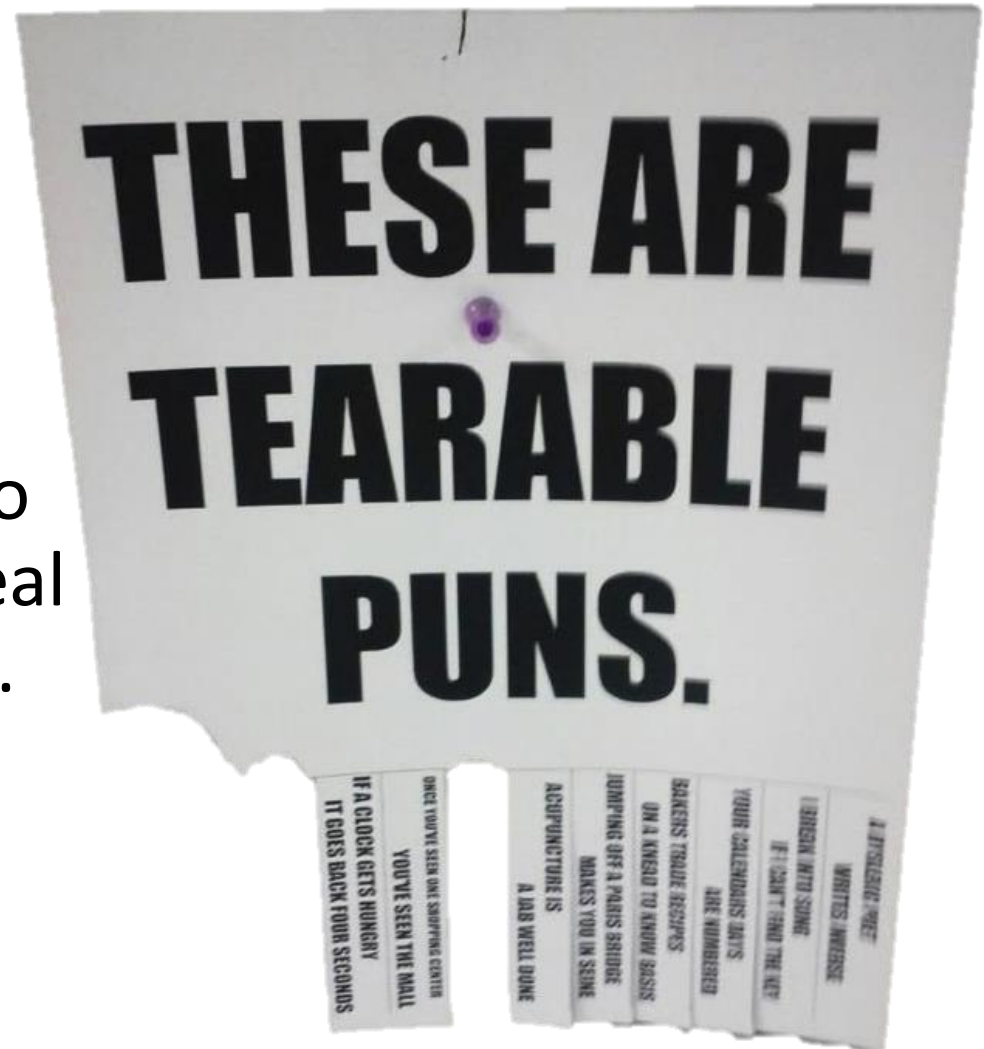
# Piloting a Real Balloon, p. 14

Discuss and illustrate in science journals how a pilot controls flight of a real hot air balloon



# I'm Sorry I Haven't a Clue Game p. 10

- Review puns, homographs, homophones, homonyms
- Rewrite book titles so that they might appeal to hot air balloonists.





# Dressing for High Flying Success, p. 10



Discuss clothing worn by real balloonists and determine what factors may play in to their decisions.

Image Credit: Wardell Brown.

<http://wardellb.wordpress.com/category/sketches/page/2/>.

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# Up, Up, and Away! p. 11



- Instructors & older students put together, test, and demonstrate launch device.
- Test launch (and repair/redesign/adjustment) of hot air balloons

# Launching!-What we learned we'd need



Grilling Gloves-are great for when  
things get hot!



# A Step-ladder!-Very Useful

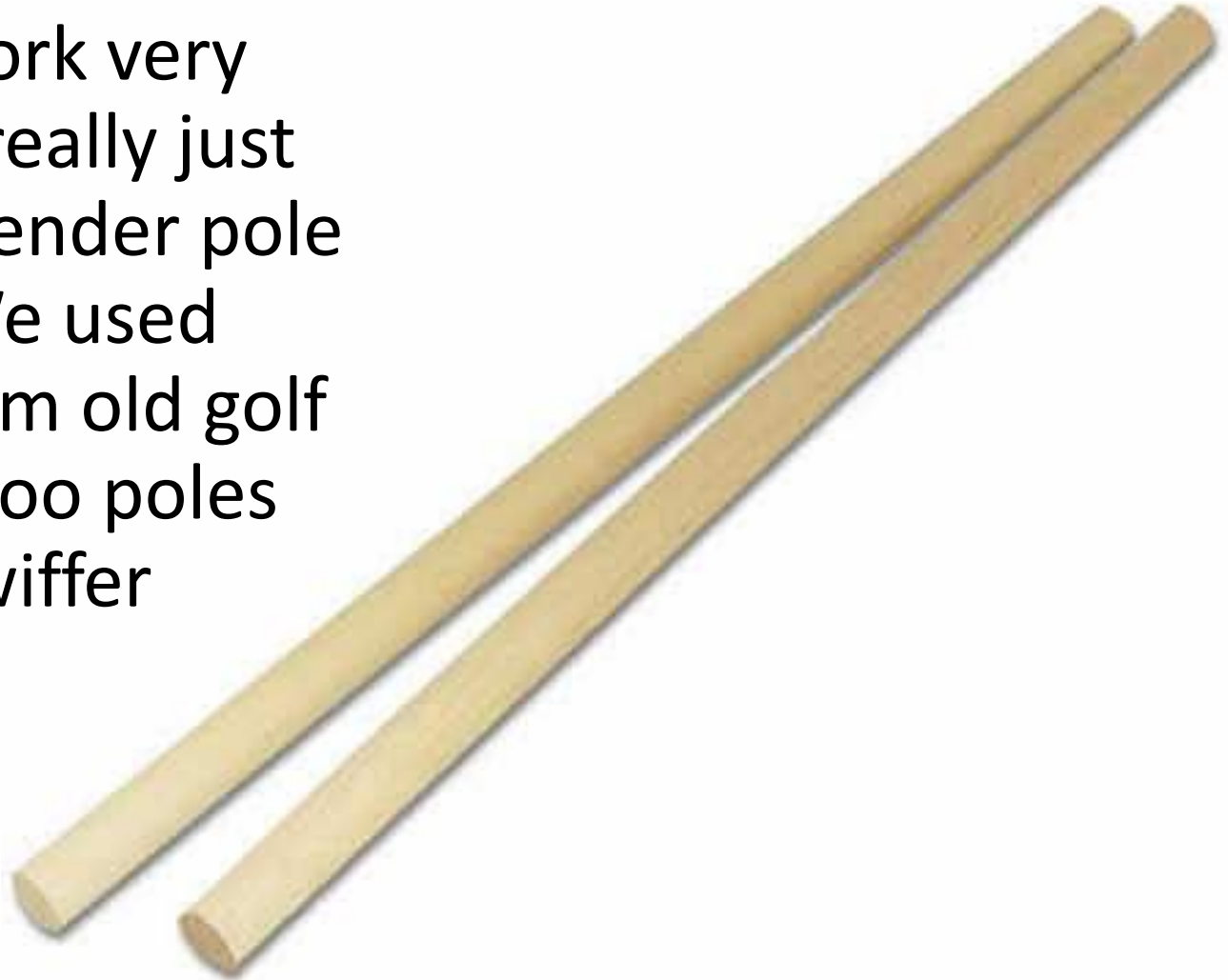


# Fishing Line-Keeps Balloons on Track & Coming Back



# Dowel Rod or Other Stick

Dowel rods work very well, but you really just need a long slender pole of any kind. We used everything from old golf clubs to bamboo poles and broken Swiffer handles.



Very Little Wind!





# Balloonatics: Modern Day Race for Glory, p. 23

Learn the history and crazy characters of the real-life tale of the fierce race to be the first to circumnavigate the globe in a balloon.



# All the Way around the World?, p. 26



Discuss and map the journey of the first team to successfully complete the goal.

# Going Solo?, p. 29

Explore billionaire  
Steve Fosset's story  
of his solo trip  
around the world  
in a balloon.



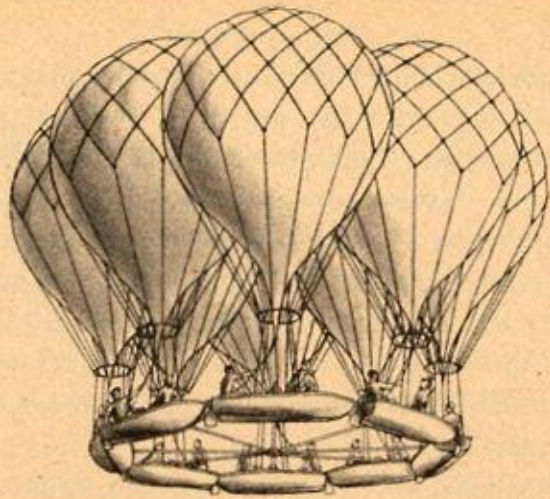
That was Part 3!



Now, on to part four,

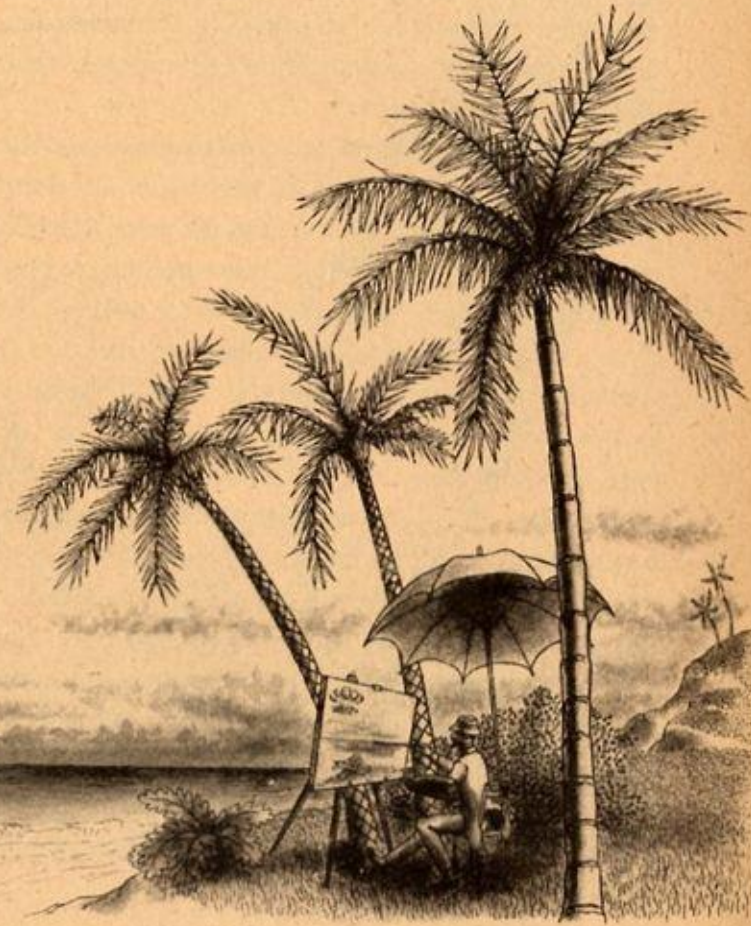
Making Our Great

Escape!



# Keep Reading!

Specific pages of the novel are referenced next to the activities in order to help the instructor easily find the related passages.



# Painting with Paper, p. 1

- Discuss system of family names in the novel
- Imagine life on Krakatoa
- Discuss components of “landscape” art
- Create landscapes from torn-paper collage



# Label Me? p. 6

- Discuss human attributes and descriptions
- Create a portrait of the ideal Krakatoan island dweller or personal portrait



# Game: It's All in the Family & Slide Show Extension, p. 7

Hilarious  
Improvisation game  
where students work  
together to create  
living Krakatoan  
“portraits.”





# Foundations of Stone, Actually Diamonds &

- Discuss Krakatoan diamond mines from the novel
- Discover how diamonds form and travel to the Earth's surface
- Determine carbon's role in forming diamonds.



# Let's Get Cracking on Diamonds! p. 10

- Crystal “diamond” growing experiment
- Watch amazing video segments on how diamonds form



# As Common as ~~Dirt~~ Diamonds, p. 13

Explore the history of diamonds and compare their real value versus their perceived value



# Did You Know? It's all because of an ad..., p. 14

Students explore and research the story of the most “brilliant” advertising campaign of all time and its influence on world-wide culture.



# Let's Get Cracking! Mine, all Mine! p.

16

- Mock mining activity with granola bars
- Students create a budget
- They learn about natural resources, environmental impact of mining, and the cost of reclamation, profit, and loss.
- Discuss and compare results.



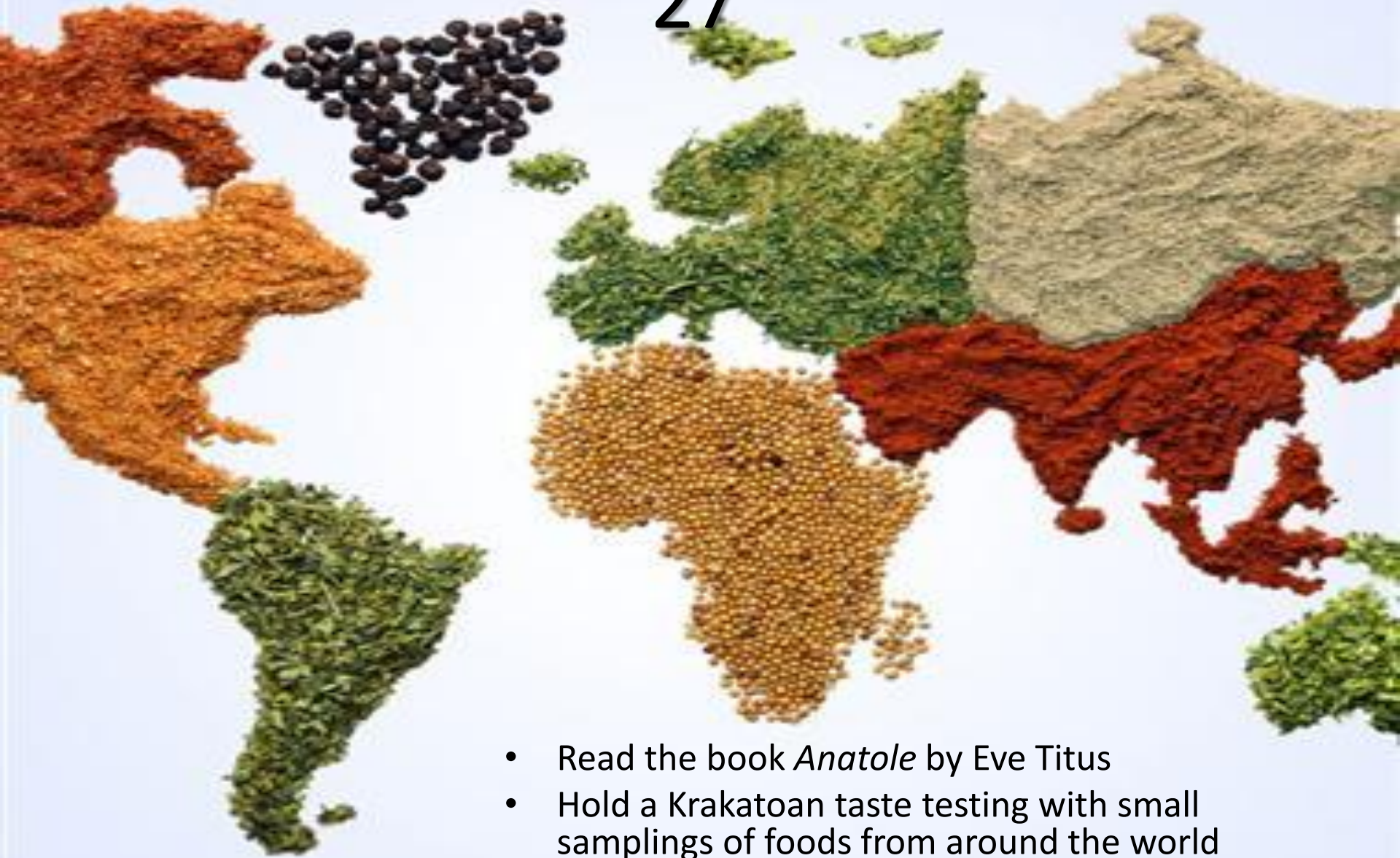
# Flying High! Making 21 Balloons, p. 23

- Discuss the children's airy-go-round on Krakatoa, the islanders adventurous escape, and other aspects of the novel.
- Measure, create templates, and weave and build miniature hot air balloons.



# Government: A lasty Adventure? p.

27



- Read the book *Anatole* by Eve Titus
- Hold a Krakatoan taste testing with small samplings of foods from around the world
- Collect and graph opinion data

# UNIT STRUCTURE



Learning the tools for a successful project with any grade



# COMMON FEATURES

With our most recent lessons (those in the last two years) and especially our STEM units there's a common format or sweep that remains fairly consistent between all the lessons...

# ONE: INTRO AND ACCESS PRIOR KNOWLEDGE

There are usually links to a video or book suggestions that can be used to access the prior knowledge that students have so instructors can work with what students already know.

Accessing what they know helps get students talking and excited about the subject they're about to study.

It's like the movie trailer, it doesn't show everything, but it piques their interest.

# TWO: HISTORY

- If we're going to cover a topic, we should cover it in depth!
- This usually involves the history of how that concept, thing, or idea came about; what other people have done with it in the past, the present, and the future; who some of those important people are & were; where those events took place; and much much more.
- This approach gives students a deep understanding of a topic and provides so many rich opportunities for expanding their knowledge and covering standards and skills they need to master in a fun and relevant way.

# THREE: ACTIVITIES TO ILLUSTRATE CONCEPTS

- These may not be the main project at the heart of the unit, but these shorter projects help solidify students understanding of what they're studying and build towards the bigger projects.
- We like to learn something and then DO something with it. For example, if we're learning about diamond mining-let's have the kids actually practice mining! And grow diamonds! If we talk about shoe design—we're going to design shoes!

# ACTIVITIES TO ILLUSTRATE CONCEPTS AND IDEAS

These activities range from writing projects where students write short stories or poems, practice grammar, reading comprehension, or writing skills, etc; to experiments where students get to form hypothesis about a scientific concept, make predictions, build prototypes, test them, record data, ex. How many 9 inch helium balloons will it take to lift a 5lb sack of potatoes?

# FOUR: MAIN PROJECT

- There's usually a project at the heart of the lesson that everything builds towards, especially with the STEM units.
- For example, in Heart Strings that would be the marionettes and putting on the play, in Wild Blue Yonder that would be the building and launching of an actual tissue paper hot air balloon, in Heart and Sole...that would be designing and building the shoes!
- Not that the smaller projects aren't important, they are very important, it's just that there's usually a big project that the lesson revolves around that is supported by those smaller projects.