

**Please remember that all assignments are due Friday April 24<sup>th</sup>**

### **Life Science week of April 20–24**

**There will be a quiz at the end of this week about birds. I will send five pictures of birds that you will need to identify. The pictures will be of birds that have visited the feeder at school or you have drawn for class.** These include a blue jay, chipping sparrow, Carolina wren, (red) house finch, northern mocking bird, northern cardinal, tufted titmouse, crow, mourning dove, robin, gold finch, black-capped chickadee, dark-eyed junco, and rose-breasted grosbeak. Please find a distinct feature you can remember easily to identify a bird (e.g., cardinals are bright red, a tufted titmouse has prominent feathers that stand up on its head, crows are totally black from head to toe, chipping sparrows have a reddish-brown spot on top of their heads...). **A second part to the quiz will require you to tell me about the habitat, diet, and any distinct features of a bird you find interesting. So part one of the quiz will be identifying five birds and part two will involve you telling me about the habitat, diet, and distinct features of one bird.**

Early in the year we spent a class using the internet to look at *extreme* bird nests (islands constructed of rocks, built on sheer rock faces, a compound nest that can house > 100 breeding pairs). Now we want to examine the nests and eggs of birds in SC. Search the internet (type in 'nest of robins;' then click 'images') and notice how the nests of robins, cardinals, northern mocking birds, black-capped chickadee, gold and house finches, and chipping sparrows all have a similar bowl-shape. Next use the internet to look at nests for the Baltimore oriole, crow, ruby-throated humming bird, and bald eagle. **Please draw the one you find most interesting and indicate the bird that built it.** When looking at nests that have baby birds, notice how they don't have feathers and their mouths are both large and always open (do you think they are hungry or simply chirping?)

Finally, we want to look at the eggs of different birds. Please use the internet to search for the 'color of robin eggs' (robin's egg-blue is actually a paint color); then continue with the Carolina wren, Baltimore oriole, northern mocking bird, and mourning dove. **Please draw and color the one you find most interesting. Also, write down the difference in size between the eggs of the ruby-throated humming bird, robin, bald eagle, and ostrich (you can search the internet using: 'size of humming bird eggs in inches,' then repeat this for the different birds).**

### **American History week of April 20–24**

Before Spring Break, we learned of the 1767 Townshend Acts (designed to raise revenue for England to pay off war debt) and 1770 Boston Massacre (only 5 colonists were killed, not exactly a massacre). Surprisingly, things calmed down in the colonies and new problems didn't arise until 1772, when a British ship patrolling for smugglers (meaning any incoming ship that did not pay duties/fees on cargo) ran aground near Providence, Rhode Island. Colonists went out, boarded the ship, and set it on fire. Such a defiant act caused King George III to form a special commission tasked with capturing and transporting the responsible colonists to England for trial. Colonists were alarmed by the prospect and being sent to England to stand trial. Therefore the colonies quickly formed Committees of Correspondence that served as a communication network used to address threats to American liberties.

Remember that one of the 1767 Townshend Acts placed a three cent tax on tea, which caused the colonists to boycott English tea. The boycott was so successful that by 1773 the British East India Company, which controlled the import/export of tea, was near bankruptcy. The British Prime minister, Lord Frederick North, had Parliament pass the Tea Act as a way to try and save the British East India Company. This act allowed the company to sell tea in America without paying import fees, which made their tea cheaper than competitors. Yet colonists still refused to buy the tea and undertook violent protests. The most notable was the

Boston Tea Party on December 16, 1773. A large group of Boston rebels, disguised as Indians, boarded three British tea ships and dumped ~90,000 lbs of East India Company tea into Boston Harbor.

In response, a livid King George III had Parliament pass what colonists referred to as the Intolerable Acts (1774). One shut down Boston Harbor, until colonists paid for the destroyed tea and damage to ships. The Quartering Act allowed British commanders to house soldiers in vacant homes and buildings. The Quebec Act gave Quebec jurisdiction (control) over all the land and fur trade between the Ohio and Mississippi rivers. Colonists were outraged to lose money from the lucrative fur trade and also by what they viewed as the spread of Catholicism in Protestant America.

King George III went further by having his commander of British forces in America, General Thomas Gage, appointed as the governor of Massachusetts. His first act was to place Massachusetts under martial (military) law. The colonists responded in September of 1774 by staging new tea parties in Boston, Maryland, New York, and South Carolina. Delegates from 12 colonies (excluding Georgia) met in Philadelphia to assemble the first Continental Congress and pass a declaration of Colonial rights. These included the right of colonies to run their own affairs, support protests in Boston, and to fight back if British troops used force. Shortly afterwards, civilian soldiers (or Minutemen) began military preparations by stockpiling arms and munitions in New England towns.

**Please record the above information in your notebooks.** There are two things I would like you to look up on the internet. First, is the original 13 colonies (**please write these in your notes**). Also, do an internet search using 'Thomas Gage – the American Revolution' (look for the website: [www.ouramericanrevolution.org](http://www.ouramericanrevolution.org)). Most people know little of General Thomas Gage, who was the commander of British forces in America before and during the American Revolution. Therefore,

please read the initial seven paragraphs of the website. Note a few things: 1) his long military career, 2) his role in the Battle of Monongahela (French and Indian War, where he met Colonel George Washington and General Braddock was killed), and 3) how his view that only overwhelming force could defeat a determined enemy influenced tactics in the American Revolution.

We will now move onto Chapter 1 of 'A Delicious Country.' **Please read p 11–30 and do a written narration.** I would suggest breaking this into two parts: p 11–18 deals mostly with marsh grass (*Spartina*), wildlife, and Huler's canoe. The remainder of the chapter focuses on Huler's canoe trip to McClellansville. He has a few insights that are worth mentioning (such as Lawson's description of the Sewee Indians and how the Indians were viewed in Europe). You should definitely include the goal Huler set for recreating Lawson's journey.

Since we are just beginning Huler's journey through the Carolinas, **I would like you to start a map.** Charleston (Oyster Point – sound familiar?) is where he set out with overnight stops at Goat Island, Capers Island, and McClellanville. At McClellanville he stayed a night in Hampton Plantation. Please look **Hampton Plantation up on the internet and draw a picture. Please note on your picture the year construction began and what architectural element makes Hampton Plantation special.**

### English History week of April 20–24

**There will be a test at the end of the week that includes material after the reign of Henry II. The kings that this test will include are Richard the Lion Heart, John, and Henry III. Significant events are the signing of the Magna Carta and creation of Parliament. There will be a question about each king, the Magna Carta, and Parliament/Simon de Montfort. Please go over carefully the material in the following study guide.**

## STUDY GUIDE

The surviving sons of King Henry II were Richard and John. Richard the Lion Heart spent most of his reign in Palestine (the Holy Land) fighting to reclaim Jerusalem from the Turks (Muslims). The English forces he commanded were part of a larger army made up of Christian soldiers from all across Europe, led by their individual rulers. Not all the rulers got along and King Richard quarreled with French King Philip and Archduke Leopold of Austria. When King Richard was done fighting in Palestine, his route back to England passed through Austria. Forces of Archduke Leopold laid in wait and captured King Richard, without anyone knowing. The English searched for their king and after a year, fortune favored the musician Blondel. Being weary from the search, he rested against the wall of a castle and sang one of King Richard's favorite songs. Richard responded and England quickly paid a ransom to secure the return of their beloved king. Yet King Richard soon met his end in France, trying to reclaim lands held by the Duke of Normandy (remember that the English king was also Duke of Normandy) that had been seized by French king Philip.

John took the throne after murdering his young nephew Arthur. King John proved to be cruel, unwise, greedy, and was hated by all. He needed money to fight battles in France and deal with quarrels at home involving the church. Therefore, he took large sums of money from the Norman barons, gave their land to foreigners, and broke charters signed by past kings. The common people were also forced to pay high taxes and this caused an unlikely alliance to form between the English people (who despised the barons) and the barons (who despised the English people). An important point is that the barons had raised armies and built strong castles, while King Richard was away fighting in the Crusades.

Since King John broke the law, his enemies (the people, barons, and church) forced a meeting at Runnymede along the Thames River, where King John Signed the Magna Charter in 1215. Remember that the Magna Carta did not create new

laws, but explicitly stated which laws King John had broken and must be followed in the future. The five laws (or articles in the Magna Carta) we focused on during class all had to do with the legal system. Number one said the king could not sell, delay, or refuse justice. Number two said the Common Court of Pleas had to be held in a fixed place (not follow the king in his travels). Number three said the king or chief justice had to send out two justices to every county in England, four times a year. Number four said that no freeman shall be arrested, imprisoned, or banished unless legally judged by peers or the law of the land. Finally, Number five said that no freeman would be fined excessively for a small offense or deprived of his means to earn a living. An important point is that all of these Articles of the Magna Carta are still followed today and form an integral part of the British legal system.

King Henry III (John's son) took the throne at age nine and later married Eleanor of Provence, France. The queen and her foreign friends requested land, money, and positions of power (including in the church). They used this newfound power and wealth unwisely; plus, they treated the English people cruelly. When King Henry III broke laws in the Magna Carta, the English people and barons rose against him. Surprisingly, the leader of the forces that stood against King Henry III was a Frenchman (Simon de Montfort). Simon wanted to establish a council to help the king govern England, which at the time was run by the king and his ministers. This led to the establishment of Parliament, consisting today of the House of Lords and House of Commons. Another change was that the king would be required to ask the people and nobles for money, specifically stating the amount of money and how he intended to use it.

After a year, Simon de Montfort was abandoned by friends and his enemies (including the king) assembled a large army. This army was led by King Henry III's son, Prince Edward, who had been trained in warfare by Simon de Montfort. Although Montfort was killed in the battle of Evesham, (1265), he is loved by the English people for two reasons. The first is due to forming Parliament and the

second is for being a true Englishman. No one fought harder for the king, when the king acted justly, and Montfort refused to leave England when offered money and castles to serve the French king.

**The class assignment for the week is to read Chapter 9 (Island of Smiths) in the Brendan Voyage.** There are two parts to this chapter. The first explores whether the flaming rocks that St Brendan reportedly saw were related to a volcanic eruption near Iceland. The second is something that happens while the crew stays in Iceland, waiting for a change in the weather. You will need to write about both, because they are important. **As these subjects are quite different, two short paragraphs are necessary.** The first should include how modern volcanic activity around Iceland is very similar to what St Brendan experienced, but describes as something different. A second paragraph needs to focus on Tim's inspection of the boat, on shore, and what he decides to do.

### **Biology week of April 20–24**

We are going to start Chapter 19 Kingdom Fungi. Please read from p 235–237 (stop at Destructive Fungi). **Please do a written narration and then put the following things into your notes.** Characteristics shared by Kingdom Fungi include organisms being multi-cellular, having a eukaryotic cell structure, and they consume different types of dead organic matter (yeast is an important exception). Fungi have filaments; slender threadlike fibers (one thread = a hypha). Many filaments that are visible to the naked eye are called 'mycelium.' Fungi have no cilia or flagella, so they do not move around. Fungi reproduce by spores contained in a membrane that is near the outer cell wall. Spores can survive extreme environmental conditions and are extremely light, which allows them to be transported by air currents (such as the Jet stream) from one continent to another. Finally, the nuclear membrane/envelop does not disintegrate during mitosis in fungi.

We want to gain a practical knowledge of terminology and the internal structure of common types of fungi by using the internet. Please do an internet search using 'cup fungus.' In the search results select: Mountain Lake Biological Station, University of Virginia. Scroll down to see the different colors of cup fungi and **sketch the one you like best (color it please). Go back to your search results for cup fungus and select: Pezizaceae – Wikipedia. Please read the first paragraph and next to your sketch put this information: the scientific name and two benefits of the fungi having a cup shape.**

Before our next search, I need to introduce terminology. The actual cup structure is referred to as the 'apothecium.' Spores are produced inside sacs called 'asci,' and these line the upper part of the apothecium. Finally, the asci develop on a basal layer of tissue called the 'hymenium.' Now do a second internet search using: 'microscopic structure of cup fungi.' Go to 'images' and look at the top two rows. Please select the image with the sub title 'PX48-002b Cup Fungus – Ascus and...' The individual asci (these have a green color) are oriented top-to-bottom in the picture. Inside each asci are spores (red color). **What is the typical number of spores in each (please write this down)?** I want each of you to look at another image labeled: 'DIVISION ASCOMYCOTA Peziza (cross...).' Click on this and notice a few things. The asci are at the top (reddish color); the larger sub-round cells beneath (bluish color) make up the hymenium; and when all are viewed together you can see the actual cup shape, or apothecium. **Please do a sketch and label the asci, hymenium, and apothecium.**

Our next subject in Kingdom Fungi is Penicillium. Please do an internet search using 'penicillium growing on an orange' to see the color and shape of the fungi colony. Now do an internet search using 'penicillium fungi' and click on 'images' to get a close-up view of the fungi. Next do an internet search using 'structure penicillium fungi' and click on 'images.' You will see black-and-white figures: look for the one with a subtitle 'Penicillium – an overview... (sciencedirect.com).'

**Please sketch this and label the Conidia (spores), Phialides, Metulae, Ramuli,**



**Rami, Stipe.** Look up the scientific name on Wikipedia and put this on your figure. Do a final internet search using ‘microscopic penicillium.’ This will show the individual spores that occur as long strings above the Phialides.

Lastly, we want to look at mushrooms. Start with an internet search using ‘morphology of mushrooms’ and click on ‘images.’ The main features in these diagrams are all quite similar: the cap, warts, gills, annulus/ring, stipe (stem), volva (cup), and mycelia threads (roots) at the base. **Please make a sketch and label it using the above terminology.** The gills are very important because these contain the spores. Do a final internet search using ‘microscopic structure of mushrooms’ and in the results, click on ‘Mushrooms under the microscope – Microscope World.’ I just want you to look at the images. You will notice linear features that represent the gills. On the edge of the gills (bluish color cells) are layers of spores (reddish color). Scroll down to the last image and notice a few features: 1) the reddish spores rest on a purple layer of blocky cells called basidia. 2) The basidia rest on the hymenium (bluish color), which produces cells that develop into basidia. 3) Attached to each basidia are four spores.

[**The Honors class** will do two readings and written narrations about Louis Pasteur in Microbe Hunters. **Please begin on p 59 and continue to p 66.** Consider how Pasteur’s willingness to help local businesses prosper led to an historic discovery. Also, part of the reason for this success was due to having a devoted wife that supported his work. **Continue reading from p 66–73.** Is having an ego a bad thing or necessary to provide the drive for a scientist to succeed? Pasteur is an interesting case because he also possessed an innate sense of what was right, the endurance to spend long hours in the lab, and a creative side.]

**Nature notebooking, week of April 20–24**

Please continue with your nature notebooking, this is a weekly activity until we return to school. **All high-school students should either send me a picture (the benefits of modern technology) or bring your notebook when turning in written assignments on Friday. We need to start doing better with this and spend some time observing nature.**

### **Spanish, week of April 20-24**

**Please continue with Duolingo and be ready to complete the conversation aspect of Lesson 10 (excluding Railey and Cheyenne). This needs to get done as soon as possible.**