### Planning the inquiry

#### 1. What is our purpose?

1a) To inquire into the following:

- **Transdisciplinary Theme**: WHO WE ARE

- **Central Idea**: When people understand their body systems they’re able to make responsible choices for their personal health and well-being.

#### 1b) Summative assessment task(s):

What are the possible ways of assessing students’ understanding of the central idea? What evidence, including student-initiated actions, will we look for?

**Content**: (eg. Test, quiz, presentation) Individual research paper on specific system (rubric)

**Process**: (eg. Demo or explanation, movie, presentation, written, visual or verbal) Group Presentation/project on specific body system (checklist)

**Product**: (eg. model, poster, movie, presentation) Group Presentation/project on specific body system (checklist) and Individual Model/product of body system (rubric)

#### Class/grade: 4  
#### Age group: 9-10  
#### School: Wildwood  
#### School code:

#### Title: Human Body: Can I Get A System?  
#### Teacher(s): Mathis/Wiedegreen  
#### Date: September 2015  
#### Proposed duration: 5 weeks

#### 2. What do we want to learn?

What are the key concepts (form, function, causation, change, connection, perspective, responsibility, reflection) to be emphasized within this inquiry?

- **Function**: Specific human body system functions and connection between body and mind.
- **Responsibility**: Actions and behaviors that keep the body systems and mind healthy.
- **Perspective**: Keeping the human body systems healthy and balanced keeps your mind healthy and balanced.
- **Connection**: Compare and contrast the old food pyramid with the updated food pyramid and with the international food pyramid.

**What lines of inquiry will define the scope of the inquiry into the central idea?**

- Understanding various systems of the human body
*** Also, using teacher checklist, students will be graded on specific contents of “body book”, Second Step activities, and self management skills, which include written evidence of responsible reactions to stressful situations.

- Choices fostering good physical health and emotional health
- Strategies for improving or maintaining health

**What teacher questions/provocations will drive these inquiries?**

1. How does our body maintain balance through its systems? (function)  
2. What are some actions and behaviors that keep the body systems healthy? (responsibility)  
3. How do healthy bodies promote healthy minds? (perspective)  
4. How does the international food pyramid compare to the U.S. food pyramid? (connection)

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#### 3. How might we know what we have learned?

*This column should be used in conjunction with “How best might we learn?”*

**What are the possible ways of assessing students’ prior knowledge and skills? What evidence will we look for?**

Students will be given a blank body outline/book with a list of organs to place in the appropriate position. Students will exchange and discuss.

Students will participate in discussion about what makes a person healthy, emotionally and physically.

Students will use Inquiry Journals to formulate a list of inquiries about the unit before we start.

Students will get into groups and complete a “What I SEE, What I THINK, What I WONDER” inquiry activity about a picture teacher displays of the human body systems.

A KWL will be used throughout the entire unit and displayed in the classroom.

**What are the possible ways of assessing student learning in the context of the lines of inquiry? What evidence will we look for? Formative Assessments:**

#### 4. How best might we learn?

**What are the learning experiences suggested by the teacher and/or students to encourage the students to engage with the inquiries and address the driving questions?**

Students will explore the classroom PYP library on the body. Students will view and research various body websites using the laptops. School skeleton will be on display.

**Learning Activities:**

1. Human body system research groups and presentations.
2. What is a cell? Read chapter in Science Book. Compare and Contrast Plant and Animal cell in groups. (Student Driven Inquiry: record in Inquiry Journals)
4. DNA mini lesson/activity sheet. Create a double helix and label properly (Demonstration)
5. Life size outline of student body. Throughout unit, add systems and organs transparencies to look like a flip chart of an accurate human body with systems. Label and explain with post-its. Display on walls. (Demonstration and Presentation)
6. Skit, ComicLife or iMovie presentation: “Blood Cell Traveling Through Body Systems” (Simulation)
Teacher Checklist: Job, location and fun facts about the human body and its systems in body book.
Process Task/Teacher Checklist: Nutrition Food Pyramid model
Teacher Checklist: Non-Fiction book reviews
Written Task: ReadWorks articles
Teacher Checklist: Transdisciplinary Skills
Teacher Checklist: Research notes and inquiry journals

7. Food Pyramid mini lesson: Compare and Contrast U.S. pyramid with International pyramid (Inquiry and Investigation)
8. Read and Analyze food labels that were brought in. (activity sheet, see attached) (Investigation)
10. Harmful or not Harmful? An inquiry into health related actions and how they relate to our systems. (activity sheet, see attached) (Inquiry and Investigation)
11. “Be A Nutritionist”: Create nutrition plan/suggestions for a person on the index card in groups. (activity sheet, see attached) (Investigation and Presentation)
13. CCSS Literature: “On My Honor” class novel (CCSS Lit 3-5, SEL)
14. CCSS Informational Text: Section 612-614 in Wildwood Library: Human Body Books (CCSS Info 2-4) and Science Book (research groups for later presentations)
16. After studying the research on the human body, students will complete a graphic organizer identifying the job, location, and fun facts of various organs and organ systems, which will be added to the “Body book” and portfolio.
17. “I messages” activity: Students are given various scenarios that trigger different emotions/feelings. They analyze their emotions and respond by stating how each situation made them feel. Second Step Health lesson for social emotional health.

What opportunities will occur for transdisciplinary skills development and for the development of the attributes of the learner profile?

SELF MANAGEMENT SKILLS:

Healthy Lifestyle skills: How to manage a healthy body and support body systems through nutrition, hygiene and exercise. Research projects. Students will understand that making healthy choices will affect their body system. Gym activities.

Healthy Choices skills: Nutrition and exercise to support body and its systems. Food pyramid, movement breaks, gym

Safety skills: Keeping your body safe physically and mentally (substance abuse, chemicals, etc) and learning about gym/sports safety, mile run, fitness testing safety. (Ms. Elipas)
Gross and fine motor skills: Knowing your body and how it moves: stages of development and movement breaks in the classroom and gym. (Ms. Elipas)

Organization and Time Management skills: Keeping a healthy mind and executive functioning during personalized learning/menu time.


5. What resources need to be gathered?

What people, places, audio-visual materials, related literature, music, art, computer software, etc, will be available?

2. Activity sheets about blood cells
3. Activity sheet about DNA Create a double helix and label properly (Demonstration)
4. Life size outline of student body. Throughout unit, add systems and organs transparencies to look like a flip chart of an accurate human body with systems. Label and explain with post-its. Display on walls. (Demonstration and Presentation) (Arts Teacher Ms. Tanner)
5. Skit, ComicLife or iMovie presentation: “Blood Cell Traveling Through Body Systems” (Simulation)
6. Read and Analyze food labels that were brought in. (activity sheet, see attached) (Investigation)
8. “Be A Nutritionist”: Create nutrition plan/suggestions for a person on the index card in groups. (activity sheet, see attached) (Investigation and Presentation)
10. CCSS Literature: “On My Honor” class novel (CCSS Lit 3-5, SEL)
11. CCSS Informational Text: Section 612-614 in Wildwood Library: Human Body Books (CCSS Info 2-4) and Science Book (research groups for later presentations)
14. DVDs: Human Health and Hygiene, Human Body Machine, Magic School Bus Traveling Inside the Body, Osmosis Jones
15. KWL chart throughout unit (Student Driven Inquiry/asking questions)
16. Agriculture in the Classroom in class field trip presentation
17. Weekly Menus on Google Drive
18. Peace Day activities in connection to our bodies and minds
19. Gym activities and movement breaks

How will the classroom environment, local environment, and/or the community be used to facilitate the inquiry?

1. Resources were displayed around the room. Books/skeleton/Nutrition Labels in PYP library
2. Student made posters displayed around the room.
3. School Lunch Menu displayed
4. Life-size human body displayed
5. Each body system group created a bulletin board around room with information

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6. To what extent did we achieve our purpose?

Assess the outcome of the inquiry by providing evidence of students' understanding of the central idea. The reflections of all teachers involved in the planning and teaching of the inquiry should be included.

This unit was very relevant to the students because they are becoming more aware of keeping a healthy body and mind and the relationship between the two through all of the activities we did. While teaching the unit, all students were engaged and motivated. Students liked this unit a lot because of how they can relate it to their lives. I believe it is smart to start with WHO WE ARE theme because 4th graders come in still acting like they are in 3rd grade. They like learning about themselves.

All students learned various things about their bodies and minds and how to take care of them. The activity that students liked the most was creating an updated Food Pyramid. We know this because we got a lot of student feedback and they were all very involved in the process. Additionally, students loved the social/emotional health lessons we were teaching from Second Step. We haven’t done this in previous years, but it relates to this unit so well. SEL is definitely a topic that connects to maintaining healthy bodies and especially healthy minds. Students were very engaged and the discussion was very rich.

We also added another component this year that was very engaging and promoted self-management skills, collaboration, problem solving, and higher order thinking. We personalized learning for the students by creating weekly menus for the students to follow and foster student choice. We used Google Drive to organize the unit in order for students and teachers to collaborate and access all of the resources/activities for the entire unit. This was very successful and we will continue to do this next year.

How you could improve on the assessment task(s) so that you would have a more accurate picture of each student’s understanding of the central idea.
I would like to continue the Human Body Systems presentations as usual. This year, I added a new component to the summative assessment/presentations. Since it is

7. To what extent did we include the elements of the PYP?

What were the learning experiences that enabled students to:
- develop an understanding of the concepts identified in “What do we want to learn?”
| Students understood body functions when they researched specific body systems. They also learned about their systems’ organ parts relative to diseases. They understood how their systems worked together for optimal health and wellbeing. |
- demonstrate the learning and application of particular transdisciplinary skills?
| SELF MANAGEMENT SKILLS: |
| Healthy Lifestyle skills: How to manage a healthy body and support body systems through nutrition, hygiene and exercise. Research projects. |
| Healthy Choices skills: Nutrition and exercise to support body and its systems. Food pyramid, movement breaks, gym |
| Safety skills: Keeping your body safe physically and mentally (substance abuse, chemicals, etc) and learning about gym/sports safety. |
| Gross and fine motor skills: Knowing your body and how it moves: stages of development and movement breaks in the classroom and gym |
| Organization and Time Management skills: Keeping a healthy mind and executive functioning during personalized learning/menu time. |
- develop particular attributes of the learner profile and/or attitudes?
In each case, explain your selection.
| LP: Balanced: The human body’s systems (respiratory, circulatory, muscular, skeletal, digestive, nervous, immune) are all connected and must maintain proper balance to function properly. The human body and the human mind are also |
difficult to assess each student with presentations, I gave a group grade and an individual grade. Each student of the group was responsible for a research paper on their system and an individual product chosen by them from a “product menu”. Finally, next year I would like to do a challenge based learning activity with this unit. This year, even with extending the unit a week, we simply didn’t have the time. The topic will be: “How Can We Make Our School a Healthier Place”. They can chose where they want to go from there. Some ideas are....improving the lunch menu, raising awareness about exercise, suggesting better gym activities and longer gym times or more per week, trying to get the school to eat healthier, etc.

What was the evidence that connections were made between the central idea and the transdisciplinary theme? As students learned more about their anatomy and nutrition, they took more ownership of their health. Students were able to make a connection between not feeling well, ex. Stomach ache to feeling guilty ex. Not doing homework. Many times when they did not feel well, we were able to figure out that the problem was not physical, but mental because something was bothering them. Also, students were really able to make the connection that WHO WE ARE inside affects who we are outside through the inquiry of the body systems. They understood that the human body’s systems must be in balance in order for them to feel happy and healthy and function properly.

connected and must maintain balance in order to function properly. Balancing nutrition and physical activity can lead to maintaining a healthy lifestyle.

Reflective: It is critical to reflect on the lifestyle and nutritional choices you make in order to maintain a healthy body and healthy mind. People must thoughtfully reflect to find ways to be better.

Attitudes: Respect: Valuing and caring about the human body by taking the proper steps and making the right choices to maintain optimal health.

Curiosity: Wanting to know more about the human body, such as, the way it functions, the way it is connected and how it affects us.

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8. What student-initiated inquiries arose from the learning?

Record a range of student-initiated inquiries and student questions and highlight any that were incorporated into the teaching and learning.

Why are peanuts and beans considered part of the “Protein/Meat” group of the Food Guide Pyramid?
Is fat good for you? Don’t we need fat?
Do I have to exercise everyday to stay healthy?
What are some ways to exercise if you don’t go to a gym?
What is a metabolism? Is it different in boys and girls?
What is under our skin?
What do we look like and how is everything all held together?
How much of our brains do we use and how does our brains send signals?

9. Teacher notes:

This year, I decided to invite an “Ag in the Classroom” presenter to come and talk to the students about how food is produced. I believe it was very effective with this particular unit because the presenter focused on our line of inquiry about nutrition. Students were able to ask questions and talk to a real farmer about nutrition and food and how it relates to the body.

Next year, I would like to invite them back for the presentation that was given and a second presentation they offer about Futuristic Farming.

I would really like to have a larger selection of non-fiction books displayed in the classroom and in the classroom library.
If our taste buds only taste sweet, salty, sour and bitter, how do we taste spicy foods?

**At this point teachers should go back to box 2 “What do we want to learn?” and highlight the teacher questions/provocations that were most effective in driving the inquiries.**

The most effective provocation during this unit was definitely "How does our body maintain balance through its systems? (function)". I really focused on the attribute BALANCED during the unit in order for students to understand that there is a connection and balance amongst all of the body's systems. Throughout the unit, students were making the connection between the human body's systems and were able to discuss how all of the systems must be in harmony in order to function properly. For example, through multiple class discussions, I was able to observe students talking about if the nervous system is not working properly, the rest of the systems will not perform at optimum capability. It was also evident that they really grasped this provocation while they were presenting their final projects. Each group's presentation included an explanation of maintaining balance within the body systems.

**What student-initiated actions arose from the learning? Record student-initiated actions taken by individuals or groups showing their ability to reflect, to choose and to act.**

Several students took action by making responsible choices to maintain their health. There were two students in particular that I want to highlight. After she researched the respiratory system and presented, she mentioned to the class that her father is a smoker. She presented several facts about a smoker's lung compared to a normal lung and as a result, she reported that she is going to do something about her father's smoking habits. She came to school the next day and told us that she presented this portion of the research to her father and convinced him to reduce the amount of smoking he was doing. She told us that he said he won’t quit right away, but he will try to cut down slowly until he could.

Another student in the class took action by not bringing junk in their lunch. Usually her mom packed her lunch, but now she packs it so she can ensure that she makes a healthy lunch for her body.

The online Edmodo end-of-unit student reflections were amazing! I want to do this every time because I have evidence of the reflection and students can collaborate back and forth by reading each other's reflections and commenting on each others.

Also, next year I would like to do a challenge based learning activity with this unit. This year, even with extending the unit a week, we simply didn't have the time. The topic will be: “How Can We Make Our School a Healthier Place”. They can chose where they want to go from there. Some ideas are....improving the lunch menu, raising awareness about exercise, suggesting better gym activities and longer gym times or more per week, trying to get the school to eat healthier, etc.

Finally, I definitely want to make sure I plan more with our science lab teacher so that the students can do some experiments related to the human body. This year, by chance, the science teacher did something with genes and DNA and it was fantastic! The more students can see the connections, the better.