The Brain Athlete in All of Us

Jane Collins
Brenda Mash
Gifted Resource Teachers

http://www.mcps.org/departments/curriculum_pages/gifted_education
Accept the Challenge
Accept the Challenge
Preassessment of Mindset

• **First Grade using Thumbs Up/Thumbs Down**
  Everyone can learn new things.
  Some kids are born smarter than others.
  We can change how smart we are.

• **Second Grade using a Yes/No Line**
  Mistakes are always bad.
  It’s never good to make a mistake.
  Mistakes make us smarter.
  People are born smart or not smart.
  I can change how smart I am.
  When I can’t do something, it means I’m going to be bad at it forever.
  If I’m bad at something, I don’t want to try it anymore.

• **Third Grade  Open-Ended Responses**
  Do you think you can grow your intelligence? Why or why not?
  What messages play in your head when you are doing something that’s challenging for you in school?
## Student Mindset Survey

This is NOT a test! It is an opinion survey. It asks your opinion about things to do with school and being a student. It is very important that you give your own opinion, not what someone else thinks. Read each statement. Decide how much you agree or disagree with the statement and circle your answer.

<table>
<thead>
<tr>
<th>Do you Agree or Disagree?</th>
<th>Disagree A Lot</th>
<th>Disagree A Little</th>
<th>Agree A Little</th>
<th>Agree</th>
<th>Agree A Lot</th>
<th>Profile Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No matter how much intelligence you have, you can always change it a good amount.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. You can learn new things, but you cannot really change your basic amount of intelligence.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. I like school work best when it makes me think hard.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. I like school work best when I can do it really well without too much trouble.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. I like school work that I’ll learn from even if I make a lot of mistakes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I like school work best when I can do it perfectly without any mistakes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. When something is hard, it just makes me want to work more on it, not less.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. To tell the truth, when I work hard at my schoolwork, it makes me feel like I’m not very smart.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Mindset Assessment Profile Number**

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## Creating Your Mindset Assessment Profile

1. First, determine your Profile Number for each question.
   - For questions with odd numbers (1, 3, 5, 7), write the number of your answer into the boxes in the right column.
   - For questions with even numbers (2, 4, 6, 8), use the table below to fill in the gray boxes in the right column.

<table>
<thead>
<tr>
<th>If you chose this answer:</th>
<th>Then write this number in the gray box on the right (Profile Number).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree A Lot (1)</td>
<td>6</td>
</tr>
<tr>
<td>Disagree (2)</td>
<td>5</td>
</tr>
<tr>
<td>Disagree A Little (3)</td>
<td>4</td>
</tr>
<tr>
<td>Agree A Little (4)</td>
<td>3</td>
</tr>
<tr>
<td>Agree (5)</td>
<td>2</td>
</tr>
<tr>
<td>Agree A Lot (6)</td>
<td>1</td>
</tr>
</tbody>
</table>

2. Now, add up all your Profile numbers.
   - Add up all the numbers in the Profile column on the right, and write the total in the last box in the bottom right corner.

3. What does your Mindset Profile Number mean?
   - Find the group that includes your number in the chart below and circle it.
   - Now, read what it says about your MAP group.

### If your profile number falls into this range:

<table>
<thead>
<tr>
<th>Profile Number</th>
<th>MAP (Mindset Assessment Profile)</th>
<th>People in this MAP group usually believe the following things:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-12</td>
<td>F5</td>
<td>You strongly believe that your intelligence is fixed—it doesn’t change much. If you can’t perform perfectly you would rather not do something. You think smart kids don’t have to work hard.</td>
</tr>
<tr>
<td>13-16</td>
<td>F4</td>
<td>You lean toward thinking that your intelligence doesn’t change much. You prefer not to make mistakes if you can help it and you also don’t really like to put in a lot of work. You may think that learning should be easy.</td>
</tr>
<tr>
<td>17-20</td>
<td>F3</td>
<td>You haven’t really decided for sure whether you can change your intelligence. You care about your grades and you also want to learn, but you don’t really want to have to work too hard for it.</td>
</tr>
<tr>
<td>21-24</td>
<td>F2</td>
<td>You believe that your intelligence is something that you can increase. You care about learning and you’re willing to work hard. You do want to do well, but you think it’s more important to learn than to always score well.</td>
</tr>
<tr>
<td>25-28</td>
<td>F1</td>
<td>You really feel sure that you can increase your intelligence by learning and you like a challenge. You believe that the best way to learn is to work hard, and you don’t mind making mistakes while you do it.</td>
</tr>
<tr>
<td>33-36</td>
<td>G2</td>
<td>You strongly believe that your intelligence is fixed—it doesn’t change much. If you can’t perform perfectly you would rather not do something. You thinking smart kids don’t have to work hard.</td>
</tr>
<tr>
<td>37-40</td>
<td>G3</td>
<td>You believe that your intelligence is something that you can increase. You care about learning and you’re willing to work hard. You do want to do well, but you think it’s more important to learn than to always score well.</td>
</tr>
<tr>
<td>41-44</td>
<td>G4</td>
<td>You really feel sure that you can increase your intelligence by learning and you like a challenge. You believe that the best way to learn is to work hard, and you don’t mind making mistakes while you do it.</td>
</tr>
<tr>
<td>45-48</td>
<td>G5</td>
<td>You strongly believe that your intelligence is fixed—it doesn’t change much. If you can’t perform perfectly you would rather not do something. You thinking smart kids don’t have to work hard.</td>
</tr>
</tbody>
</table>

4. Do you think the description under your MAP group matches the way you think and feel about your school work? Which parts are true for you and which are not?
### Mindset Quiz

Place a check in the column that identifies the extent to which you agree or disagree with the statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Your intelligence is something very basic about you that you can’t change very much.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. No matter how much intelligence you have, you can always change it quite a bit.</td>
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<tr>
<td>3. You can always substantially change how intelligent you are.</td>
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</tr>
<tr>
<td>4. You are a certain kind of person, and there is not much that can be done to really change that.</td>
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<td></td>
<td></td>
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<tr>
<td>5. You can always change basic things about the kind of person you are.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Music talent can be learned by anyone.</td>
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<tr>
<td>7. Only a few people will be truly good at sports— you have to be “born with it.”</td>
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<tr>
<td>8. Math is much easier to learn if you are male or maybe come from a culture who values math.</td>
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<tr>
<td>9. The harder you work at something, the better you will be at it.</td>
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<td></td>
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</tr>
<tr>
<td>10. No matter what kind of person you are, you can always change substantially.</td>
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<tr>
<td>11. Trying new things is stressful for me and I avoid it.</td>
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<td></td>
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<tr>
<td>12. Some people are good and kind, and some are not— it’s not often that people change.</td>
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<tr>
<td>13. I appreciate when parents, coaches, teachers give me feedback about my performance.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>14. I often get angry when I get feedback about my performance.</td>
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</tr>
<tr>
<td>15. All human beings without a brain injury or birth defect are capable of the same amount of learning.</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>16. You can learn new things, but you can’t really change how intelligent you are.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. You can do things differently, but the important parts of who you are can’t really be changed.</td>
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<td></td>
</tr>
<tr>
<td>18. Human beings are basically good, but sometimes make terrible decisions.</td>
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<td></td>
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</tr>
<tr>
<td>19. An important reason why I do my school work is that I like to learn new things.</td>
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</tr>
<tr>
<td>20. Truly smart people do not need to try hard.</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from: [http://www.classroom20.com/forum/topics/motivating-students-with](http://www.classroom20.com/forum/topics/motivating-students-with)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. ability mindset – fixed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. ability mindset – growth</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>23. personality/character mindset – fixed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. personality/character mindset – growth</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>25. ability mindset – growth</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Strong Growth Mindset = 45 – 60 points  
Growth Mindset with some Fixed ideas = 34 – 44 points  
Fixed Mindset with some Growth ideas = 21 – 33 points  
Strong Fixed Mindset = 0 – 20 points

### Total

**Grand Total**
Preassessment of Brain

Draw what’s inside your head.

Draw a picture of what you think your brain looks like.

Write down anything you know about your brain.
Story With
Holes
Preassessment of Brain
1st Grade Examples
Preassessment of Brain
Preassessment of Brain
5th Grade Example

What's going on in my head?
Preassessment of Brain
3rd Grade Example

My Brain is the central command system of the body. It is a wumpy grey blob in the belly. I know it does not have eyes, a mouth, or a nose but it is a living organism and without it I would not be able to talk, solve math problems, remember things, or write. It's even more than that. It's helping tons of people to be better than others.

The Brain
Gracie
Meet the Robinsons
The word smart hadn’t been created until the Bossy Brain. Everyone learns in their own unique way—no brain is the best.
Cartoon Brains
2nd grade
Cartoon Brains
2nd grade
My brain has four lobes.
Tell about what's in your brain!

Tell about your favorite color!
Tell about your favorite food!
Tell something you know a lot about!
Tell something you learned to do last year.

Tell what you want to have in your brain!

Tell about something you want to learn to do this year!
Tell about something you might want to do in the next few years!
Tell about something you might want to do someday!

Tell how to stretch your brain!

Tell about 3 different ways you can stretch your brain. Hint: do you know any games that make you think?
Teaching the Brain
Grades 3-5

• Brain Map - label the parts of the brain and understand functions of each part
• Videos appropriate to each grade level
• Neurons - understanding its structure and function through video
• Neuroplasticity
• Make models of the brain or the neuron (neurosculptor)
The Dendrite Song

Composed by Bruce Campbell
sung to the tune of *Clementine*

Use your dendrites,
Use your dendrites,
To connect throughout your brain.
Take in info, analyze it,
Grow some new ones
Unrestrained.
Axons send out
Neurotransmitters
To the dendrites all around
Across the synapse
Jumps the impulse
New ideas can now abound.

Stimulation
Is what the brain need
To make dendrites stretch and grow.
New connections
Make us smarter
In what we think and what we know.
Use your dendrites,
Use your dendrites,
To connect throughout your brain
Take in info, analyze it,
Grow some new ones
Unrestrained.
I've been working on my neurons,
All the livelong day.
I've been working on my neurons,
Just to make my dendrites play.
Can't you hear the synapse snapping?
Impulses bouncing to and fro,
Can't you tell that I've been learning?
See how much I know!

lyrics by Linda Lubhart, Vicki Wielgopolan, Debora Parisot, Kathy Despain and Bev Richardson
teachers in Power Tools, Mendota, Illinois
Grade 1
Neuron Model
Grades 3-5 Brain and Neuron Models
Teaching the Brain
Grades 3-5

• Brain Breaks gonoodle.com
• Songs-Neuroscience for Kids
• Games (online)
• Brain Growth Tracker
• Students Become Neurons
The Brain and Its Functions

You may choose to work in pairs, in threesomes or independently to demonstrate what you have learned about the brain and its functions.

<table>
<thead>
<tr>
<th>Create a model of the brain or a model of a neuron</th>
<th>Write a comic strip.</th>
<th>Perform a dance or song.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illustrate and label the parts of the brain.</td>
<td>FREE CHOICE</td>
<td>Investigate inventions by mistake</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Mistakes That Worked: 40 Familiar Inventions and How They Came to Be by Charlotte Jones)</td>
</tr>
<tr>
<td>Create a fact book about the brain.</td>
<td>Demonstrate the brain and its functions in a skit.</td>
<td>Write a story about a journey through the brain.</td>
</tr>
</tbody>
</table>
Teaching Mindset

• Brainology: You Can Grow Your Intelligence-Socratic seminar or Jigsaw strategy

• Neuroplasticity video

• Meet the Robinsons clip/relate back to STEM challenge at beginning of year

• The Owner’s Manual for Driving your Adolescent Brain (grades 3+) by JoAnn Deak

• Exit slip- change a fixed mindset statement into a growth mindset
Fixed versus growth mindsets?

Carol S. Dweck on how the two mindsets influence behavior and achievement
Praise intelligence or effort?

“Praise for intelligence tended to put students in a fixed mind-set (intelligence is fixed, and you have it), whereas praise for effort tended to put them in a growth mind-set (you’re developing these skills because you’re working hard).”

Mueller & Dweck, 1998
WHAT HAPPENED TO YOU?
HOBBS AND I HAD A FRANK EXCHANGE OF IDEAS.

WHAT ARE YOU DOING? HOMEWORK?!
I WASN'T SURE I UNDERSTOOD THIS CHAPTER, SO I REVIEWED MY NOTES FROM THE LAST CHAPTER AND NOW I'M REREADING THIS.

YOU DO ALL THAT WORK?!
WELL, NOW I UNDERSTAND IT.

HUH! I USED TO THINK YOU WERE SMART.
The Power of Yet
The Power of Yet

My Connections . . .

New

Not yet . . .

Strong

I try, I practice, I GROW!
The Power of Yet

My Strong and “Not Yet” Neural Connections

Brain

Ready-to-Use Resources for Mindsets in the Classroom © Prufrock Press Inc. Permission is granted to photocopy or reproduce this page for individual use only.
How will your brain learn and grow today?

“I like to try new things.”

“I keep trying until I can!”

“My efforts and mistakes helped me learn! What’s next?”

Making mistakes is one of the best ways your brain learns and grows! The harder you try without giving up, the more you will learn. GROW YOUR INCREDIBLE BRAIN TODAY!
The Benefits of a Growth Mindset
Carol Dweck
Khan Academy: You Can Learn Anything
References

- Dweck, Carol S. (2010)  *Even Geniuses Work Hard*
- Ricci, Mary Cay. (2013)  *Mindsets in the Classroom: Building a Culture of Success and Student Achievement in Schools*
- Willis, Judy (2009-2010)  How to Teach Students About the Brain
- Willis, Judy (2009-2010)  What You Should Know About Your Brain
- Neuroscience for Kids website
- *The Mindful Classroom* (2012)  Teaching the Brain
References

• Brain Hemisphere Hat

• Mindsets Survey by Kryza, Duncan, Stephens 2011

• You Can Grow Your Intelligence: New Research Shows the Brain Can be Developed Like a Muscle
  www.brainology.us

• Carol Dweck Mindset Quiz

• Mindset Works: Home of Brainology
  www.mindsetworks.com

• The Mindful Classroom: Teaching the Brain
  https://themindfulclassroom.wordpress.com/2012/10/13/teaching-the-brain/

• Khan Academy: Growth Mindset Lesson Plan
References

- Brain Jump with Ned the Neuron: Challenges Grow Your Brain  
  https://www.youtube.com/watch?v=g7FdMi03CzI
- The Learning Pod: The Learning Brain  
  https://www.youtube.com/watch?v=cgLYkV689s4
- Magic Box Animation: Brain  
  https://www.youtube.com/watch?v=RAMqfq_G4Ms
- Meet the Robinsons: Keep Moving Forward  
  https://www.youtube.com/watch?v=LmW3H-EXYS0
- Neuroscience for Kids  
  http://faculty.washington.edu/chudler/neurok.html
- Sentis: How the Brain Works  
  https://www.youtube.com/watch?v=XSzsI5aGcK4
- Sentis: Neuroplasticity  
  https://www.youtube.com/watch?v=ELpfYCZa87g
References

• Yvonne Dunn’s MS students (neuron models)
  https://www.youtube.com/watch?v=Bxs-ISFdKHW

• You Can Learn Anything
  https://www.khanacademy.org/youcanlearnanything

• Janelle Monae “The Power of Yet” from Sesame Street
  https://www.youtube.com/watch?v=XLeUvZvuvAs