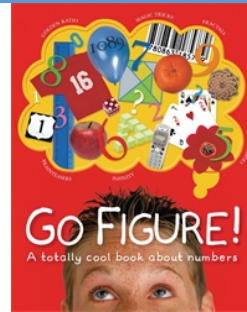
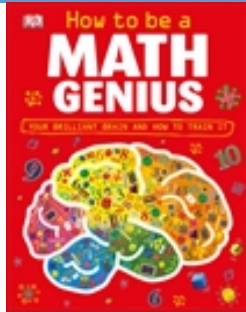


DK Common Core state Standards Alignment



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Go Figure & *How to be a Math Genius* are excellent tools for students from elementary to middle school providing opportunities for math learners to engage in *mathematical practices* by incorporating math into real – life experiences and fun hands on activities. They also meet the criteria for CCSS reading expectations.

1. Make sense of problems and persevere in solving them

Students:

- Explain to themselves the meaning of a problem and look for entry points to its solution. They analyze givens, constraints, relationships, and goals.
 - They monitor and evaluate their progress and change course if necessary.
 - Explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends.
 - Use concrete objects or pictures to help conceptualize and solve a problem.
 - Check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?”
 - Understand the approaches of others to solve complex problems and identify correspondences between different approaches.
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2. Reason abstractly and quantitatively

Students:

- Make sense of quantities and their relationships in problem situations.
 - Build habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
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3. Construct viable arguments and critique the reasoning of others.

Students:

- Understand and use stated assumptions, definitions, and previously established results in constructing arguments.
- Analyze situations by breaking them into cases, and can recognize and use counterexamples.
- Justify their conclusions, communicate them to others, and respond to the arguments of others.
- Reason inductively about data, making plausible arguments that take into account the context from which the data arose.
- Compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is.
- construct arguments using concrete referents such as objects, drawings, diagrams, and actions
- Listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

4. Model with mathematics

Students:

- Apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.
- Apply proportional reasoning to plan a school event or analyze a problem in the community.
- Identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas.
- Analyze those relationships mathematically to draw conclusions.
- Interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5. Use appropriate tools strategically

Students:

- Consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software.
- Are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful
- Detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable



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them to visualize the results of varying assumptions, explore consequences, and compare predictions with data.

- Identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems or understand concepts
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6. Attend to precision

Students:

- Communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning.
 - Calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context.
 - Give carefully formulated explanations to each other.
 - Examine claims and make explicit use of definitions.
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7. Look for and make use of structure

Students:

- Look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$.
- Recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective.
- See complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y .

8. Look for and express regularity in repeated reasoning

Students:

- Notice if calculations are repeated
 - Look both for general methods and for shortcuts.
 - Continually evaluate the reasonableness of their intermediate results.
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