# Dyslexic Advantage NEWSLETTER



the evolution of complementary cognition

# **DYSLEXIA**



With Dr. Helen Taylor

- AVOID THE 3RD GRADE MADNESS
- CATCHING UP

- DYSLEXIA AND CREATIVITY
- MIND MAPPING MATH
- DYSLEXIA NEWS





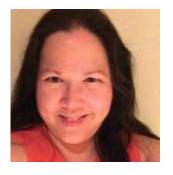


RITERS

Creative Writing and Thinking,







Fernette Eide MD, Editor



Dear Friends,

Some fascinating reads this month - including our cover story on Dr. Helen Taylor's Complementary Cognition. There's still time to encourage your student to enter our Ingenuity Awards. The deadline is May 15th. Read more on page 22!

- Fernette

Become a **Premium Subscriber** and discover the most comprehensive resource on dyslexia in the world. You can sign up for an individual subscription or gift a school with institutional subscription. Don't forget there is a **Homeschooler's** course for parents and for teachers, a clock hour course that provides professional development credits **(Dyslexia for Teachers)**.

The **NEUROLEARNING** Dyslexia Screening App is \$39.99 and available for children and adults 7-70 years old. iPad, iPhone, Android, and Kindle Fire.



The app may be used to identify and qualify for services such as Benetech's huge free library of e-books.

Thank you volunteers Shelley Wear, Trish Seres, Dayna Russell Freudenthal, and Michelle Wiliams for their astute critique and proofing. Thanks to Lady Grace Belarmino for beautiful design and layout.

# **PREMIUM**

Editor's Note: to make our publications easier to read, we will avoid use of italics and certain types of fonts.

Newsletters can be read online **HERE**. This issue will be available on the Joomag site for 3 months and can also be downloaded as a pdf file.



# CONTENTS

**DYSLEXIC ADVANTAGE ISSUE 76 APRIL 2022 NEWSLETTER** 





AVOIDING THE THIRD GRADE MADNESS





18 MIND MAPPING MATH



STEM/STEAM INGENUITY AWARDS



# **COMPLEMENTARY COGNITION**

"...our current education and work environments are often not designed to make the most of dyslexia-associated thinking, we hope this research provides a starting point for further exploration of the economic, cultural and social benefits the whole of society can gain from the unique abilities of people with dyslexia."

- Nick Posford, CEO, British Dyslexia Association about Dr. Helen Taylor's theory of complementary cognition.

Since dyslexia may be present in as many as 17% of the general population, many have questioned why such a high incidence exists. One provocative answer to this question comes from Dr. Helen Taylor, the first author on a paper about Complementary Cognition, a theory that proposes that brain-based differences that exist among groups of individuals like dyslexic community may have been essential for the adaptation of the human species to a challenging and highly changing environment. Her theory came together from diverse sources, including cognitive psychology and neuroscience, evolutionary theory, paleoenvironmental evidence, and archaeology (read more HERE).

Her in-depth paper is currently under review, but a fascinating preview has be posted to the World Economic Forum <u>HERE</u>. It's titled, How dyslexia could help humans adapt to climate change. It's co-authored with Kate Tointon.

## **Excerpt:**

Complementary cognition "...proposes that humans evolved to specialize in different but complementary ways of processing information. It suggests that collaboration to combine these different specialisms enables human groups to act as more than the sum of their complementary parts, increasing our ability to co-create, solve problems, and adapt.

At the most fundamental level, this cognitive specialization reflects the extent to which individuals are about to exploit the known versus explore the unknown. This new research proposes that people with dyslexia are specialised in exploring the unknown. Combining these cognitive specializations may underpin our success as a species by making us exceptionally adaptive - if we collaborate. It is a system thought to have evolved through adaption to a highly variable world over hundreds of thousands of years. "

It continues, "..this so-called disorder affects a large proportion (about 10-20%) of the world's population, regardless of culture or language. Such ubiquity suggests that people with dyslexia, rather than having a disorder, in fact have an advantageous form of cognition passed on to us from our ancestors over thousands of generations.

New research shows that the brains of people with dyslexia are specialised in exploration – that is, they tend to explore the unknown rather than relying on existing knowledge. Exploration is associated with experimentation, invention and discovery, and can involve exploration for new knowledge in abstract space and time as well as in physical space. This specialisation comes at the expense of processing more detailed information, to sequence and exploit the known – which contributes towards explaining why dyslexic people have reading and writing difficulties.

Given their enhanced abilities to explore, it's not surprising to find that people with dyslexia tend to work across disciplines, often being driven to discover and connect. Exploratory specialisation in people with dyslexia appears to manifest in higher-level strengths, such as enhanced abilities to identify the root causes of problems and see fundamental system patterns, anticipate long-term trends and invent highly original strategic or technological solutions..."

It's a bold theory that looks at some of the disproportionate positive contributions that dyslexic people have made to society and scientific and technological discovery. We look forward to being able to review the next research publication that examines this compelling theory that make significant contributions to today's thinking about dyslexia and the value of neurodiversity.

Learn more at **Complementary Cognition**.

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# **CREATIVITY AND DYSLEXIA**



"individuals with dyslexia significantly outperformed controls in creativity scores in adult samples..."

- Majeed et al., 2021

In the past year, there have been two more studies to add to the creativity research literature on dyslexia. The first, a meta-analysis of 14 studies found clear patterns of stronger creativity among dyslexic adult subjects compared to non-dyslexics, but non-signficant differences among children or adolescents. The studies included a variety of creativity tasks and measures. Unfortunately, that paper offers little speculation about why that difference might exist, but with recent theories about the role of executive function and attention systems in creativity, it may be that the stronger performances on creativity tasks are only seen on a group basis after executive function abilities have matured.

In at least one European study of dyslexic children and adolescents on the drawing tasks of the Torrance Test of Creativity, dyslexics outperformed their non-dyslexic peers in the areas of originality and elaboration.

Interestingly, a study done in Hong Kong showed dyslexic 2nd and 4th graders showing strengths in nonverbal fluency and originality, though weaker performances verbally (see next page). Furthermore, these strengths were present without corresponding higher nonverbal IQ scores, suggesting that conventional IQ testing may miss these clusters of strengths.

From the paper: "Our results demonstrated that regardless of grade, Chinese children with DD (developmental dyslexia) exhibited higher nonverbal creativity and comparable figural creativity in relation to their TD (typcically-developing) peers....despite their significantly weaker nonverbal IQ, Chinese children with DD still exhibited higher fluency and originality of nonverbal creativity than their TD peers, regardless of grade level or age.



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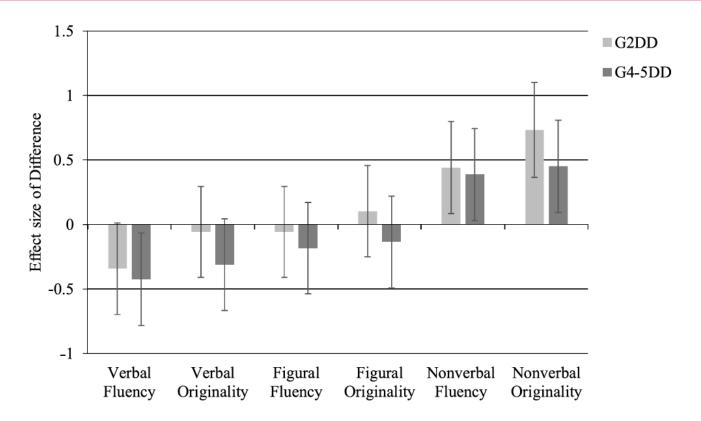




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# **CREATIVITY**



Extending these previous studies (e.g., Cancer et al., 2016; Tafti et al., 2009), which reported enhanced nonverbal creativity strengths in children with DD, our study comprehensively assessed originality and fluency of creativity across verbal, figural and nonverbal modalities in both younger and older children with and without DD, and demonstrated for the first time that, despite their significantly weaker nonverbal IQ, Chinese children with DD still exhibited higher fluency and originality of nonverbal creativity than their TD peers, regardless of grade level or age. Given that fluency and originality are key elements of outside-the-box imagination and divergent thinking essential for achieving innovation (Kim, 2006), our results indicate that relative to their TD peers, children with DD were quicker to imagine diverse possibilities and generate broader and more unique visual responses. Also, since the responses were picture drawings that rely heavily on visual-spatial processing (West, 2008), the nonverbal creativity strength found in children..."

This suggests that, instead of solely emphasizing the "deficits" of children with DD, teachers, parents, and educational programs and curriculums should also underscore their potential for nonverbal creativity strengths and develop effective strength-based learning strategies that help them succeed and thrive in school and in the larger society."

# THIRD GRADE



If you're the parent of a third grade child with dyslexia in the public school system, your student may be having an especially difficult time. Some of the struggle might be understandable as classrooms attempt to move past learning to decode to reading to learn (see post <a href="Dyslexia">Dyslexia</a> and the Third Grade Wall), but there are additional pressures placed on students due to reading loss from the pandemic in addition to institutional pressures to get students "reading by the third grade."

### RESEARCH ABOUT READING AND THE THIRD GRADE

One of the compelling forces behind the pressure for 3rd graders has been a report by the Anne Casey Foundation titled, Early Warning: Why Reading by the End of the Third Grade Matters (learn more HERE), but although the report accomplishes good things like improving funding and training for early literacy, it can also place unnecessary pressure on young dyslexic students - especially as many schools are woefully behind in terms of identifying and specifically remediating dyslexic students. Teachers are also unnecessarily pressured to "get their students reading" even if it might just take longer for some students because of co-existing processing issues, working memory overload, dyspraxia, or second language learning. What is true is just providing more of ineffective curricula or infusing punishments or anxiety into the learning to read process may end up doing more harm than good.

### DYSLEXIC STUDENTS MAY BE ESPECIALLY SENSITIVE TO EMOTIONAL CUES

Because as a group, young dyslexic children seem <u>more emotionally sensitive</u> to external situations, we should give more attention and not less to the importance the social and emotional well-being of dyslexic students.

# **NEGATIVE CONSEQUENCES OF "READING BY THE END OF THIRD GRADE"**

Although there may have been good intentions to get all children reading by the end of the third grade, there are also potential negative consequences - for instance adding stress and feelings of failure to students who can't make this deadline.

Currently, funding and support for dyslexia or literacy-related challenges are overwhelming focused on K-3, leading older students struggling to receive appropriate identification, supports, and remediation. Focusing efforts on the youngest children may mean over-diagnosing some students at a time when great variability may exist between students. Young students are less test-experienced and more distractible, while others may not perform as well as peers due to being slower bloomers, second language learners, or having less exposure to reading and phonemic awareness.

Again, the idea of identifying dyslexic children early is a worthy goal, but announcements of K-3 literacy programs all too frequently accompany negligible additional funds to help older students... and if severe difficulties persist for students at these older ages, more help is needed, not less.

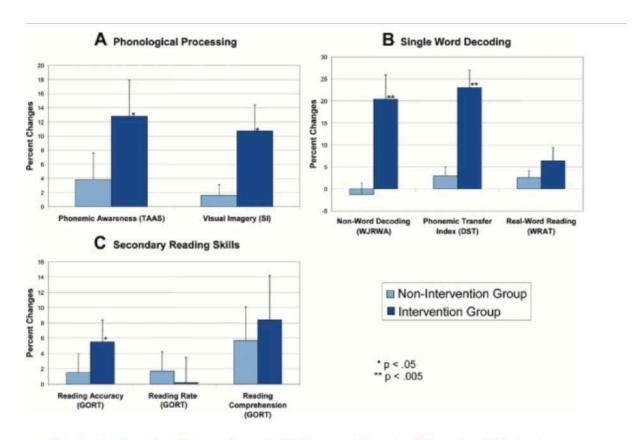
### MANY DYSLEXIC PEOPLE LEARN TO READ OLDER THAN THE THIRD GRADE

If people interpret the Casey Foundation studies to mean that reading interventions are not helpful beyond the 3rd grade, then they are wrong, wrong, wrong. In the hundreds of dyslexic adults we have interviewed over the past decade, many told us they only learned to read years later.

For MIT professor Cathy Drennan and Princeton rocket scientist Dave McComas, it was around the age of 12 or the 6th grade when reading finally happened. For others, it was their 20's or adults who never were remediated found their careers, became CEOs, despite relying largely on "guess-and-go" strategies studying with others, and learning from lecture. What that also means is that it's never too late to learn. Seniors can learn to read as well as people of every age in-between.

# THIRD GRADE

In this <u>study</u> of adults with dyslexia (median age 44), here are the results of 8 weeks of 3 hr a day multisensory and imagery-based dyslexia intervention (Lindamood Bell).



Download: Download high-res image (152KB)

Download: Download full-size image

In two months of training, you can see quite significant progress in phonological processing and single word reading - and improvements in reading accuracy and comprehension, too, but reading rate still lagging.

More intervention than two months will be necessary to see improvements in reading rate - but this is clearly progress and the changes in brain scans show improvements similar to those seen in remediated dyslexic children.

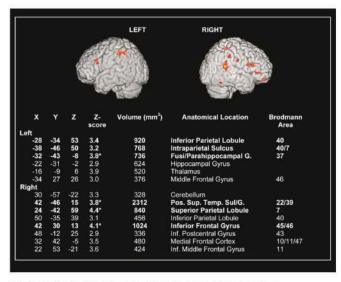


Figure 3. Functional Anatomy of Phonological Manipulation following Reading Remediation

### WHY SOME STUDENTS TAKE LONGER TO READ

There are many reasons why students take longer to read and some reasons relate to the nature of processing differences, working memory, and other factors such as dyspraxia, and executive function. But the most important thing if you are working with such a student is to encourage them and not add to any stress. Find outlets for their non-reading-related interests whether it's sports, the arts, the outdoors, or whatever else - and help connect them to technology or multimedia to make sure they have full access to learning.

In our experience, there is often another spurt in abilities that dyslexics have around the 6th grade, and then around 9th, and then in the early 20s. Sometimes it may seem that little progress is being made, but just continue to work steadily, then you may suddenly see a surprising jump in abilities.

Some students who really have great difficulty with reading, may have very strong auditory skills as a result - so cultivate those skills and look for opportunities to develop talent - for instance in public speaking or even debate.

# SLOWER TO REMEDIATE DYSLEXIA MAY BE SUGGEST A SPIKY PROFILE; LOOK FOR STRENGTHS

Sometimes severe or resistant dyslexic students or adults are signs of an individual with large differences between areas of strength and weakness - or the so-called "spiky profile" person. What that might mean is that while reading remediation proceeds in a slow-and-steady fashion, look hard for talents and abilities that may come easily...this might take the form of spatial talents that manifest themselves with an ability to build, visualize, and understand how things work.

Easy to remediate dyslexic students aren't necessarily the "smartest" or "most capable". In fact in one of the best longitudinal studies of dyslexic students, Margaret Rawson's Dyslexia Over the Lifespan, she well noted: (those)...who were early diagnosed as having severe to moderate specific lagnaguage disabilities have achieved at least as high levels of education and socioeconomic status as their linguistically facile classmates."

# Helping Children, Teens, Adults, and Families Realize Their Potential

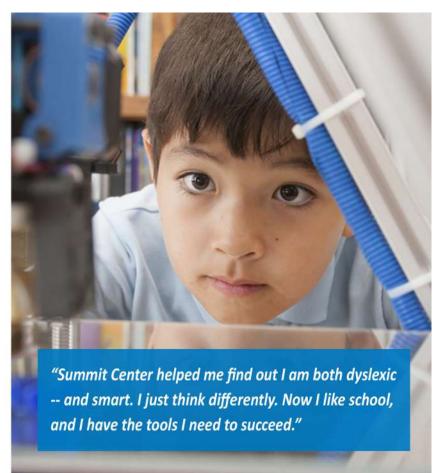
### assessment | consultation | treatment

Summit Center specializes in helping students with complex learning profiles and differences -- including kids who may be gifted, and those who might be both gifted and have challenges (known as twice-exceptional or 2e). We provide formal evaluations of strengths and challenges, and offer specific strategies and recommendations to guide growth and maximize potential.



### Offices in California:

San Francisco Bay Area 925-939-7500 Los Angeles Area 310-478-6505 www.summitcenter.us info@summitcenter.us







# Join the Dyslexia Learning Festival for a day of inspirational thinking!

This **free** virtual festival brings together a host of renowned international speakers for a day of reading, research and resources that both parents and educators will love.

28<sup>th</sup> Apr 2022

**05.30**<sub>am</sub>
- **10.30**<sub>am</sub>
EST







The festival will then be followed by a Facebook Live Panel Session at 2pm EST.



Register at: www.dyslexialearningfestival.org





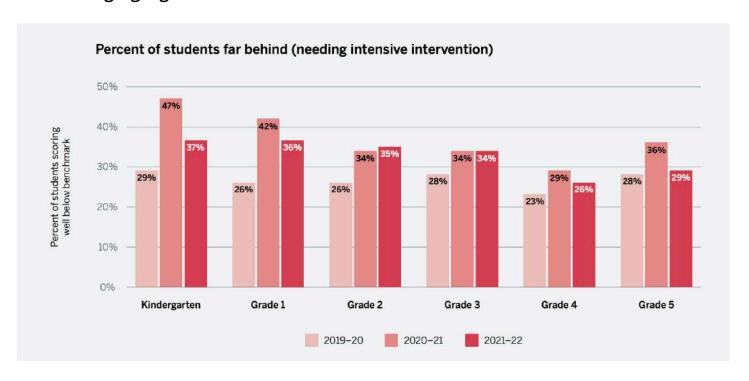


# RECOVERING FROM PANDEMIC LOSS



Numbers are starting to trickle in from <u>February testing</u> and the good news is that things are beginning to recover, but younger grades are behind more than older children. The numbers below are all students, without dyslexic students studied separately, but if your kids are on the <u>Amplify</u> curriculum, expect that about 1/3 of the class will be identified as needing "intensive intervention." Analysis by race and ethnicity suggest even higher rates of students needing intensive intervention (for instance in the 1st grade, 48% of black students and 43% of hispanic students).

Now, students themselves are also recovering from pandemic disruptions, and the numbers this year are better than the year before, so that is clearly an encouraging sign.



# **RECOVERY**

Because dyslexia remediation is so dependent on multisensory learning, having to learn with masks on or having the teacher or turors wearing masks definitely made it more difficult (if not impossible in some cases) for accurataely hearing and getting feedback for pronunciation.

As spring is now here and the school year winding down, the main take-home points should be that there will be many students in the same boat if your students are struggling with pandemic reading loss. Teachers are trying to make up for losses too, but you can continue to regularly read with your student (or read along with audiobooks) and continually to give positive feedback and corrections at home.

With the increased needs in the classroom - there may be more attention to reading (which is a good thing), but also larger pull-out groups and more assignments to computer work whether or not that is the best way your child learns.

For some students, it's very important that they learn with minimal background noise and with a teacher or para-educator with clear pronunciation and explicit feedback. If parents are dyslexic themselves, they may feel less confidence reading with their children (many do so anyway) - but offloading the reading to a professional audiobook reader is also fine...if you can get into the practice of listening along with reading, that can be better than listening alone - because students will see much more print that way and get the auditory feedback of words as well as visual practice of regularly moving across a page.

Students who have frequent line skips, should read along with their finger or cover the page below with a card. Adjust the speed of the audiobook. This can be done with almost every app - <u>Overdrive</u> from books from the library, <u>Audible</u>, but also operating system text-to-speech systems for <u>Apple</u>, <u>Google</u>, and <u>Microsoft</u>.





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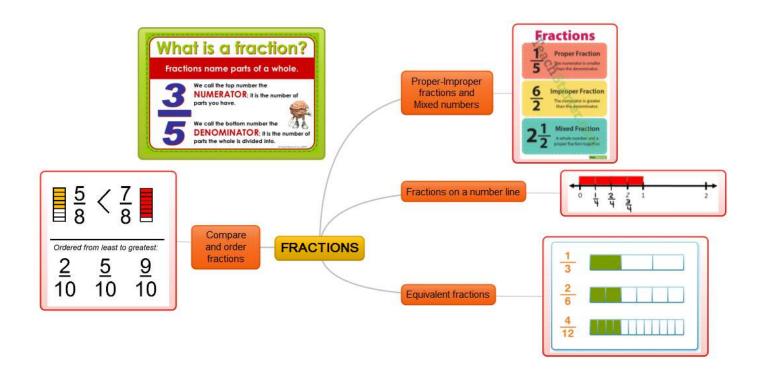
National Center for Learning
Disabilities, the International
Dyslexia Association have
evaluated the Sonday System(r) and deemed that the
program contained the required elements for teaching
reading identified by the
Nation Reading Panel.

# MIND MAPPING MATH

Fractions can be confusing. Some students are confused by the new terminology that comes with fractions (numerator, denominator), while others are confused because they seem to have different principles from those learned from whole numbers.

Numbers that "get bigger" are not necessarily more numerous or larger; if the numbers are in the denominator, they get smaller.

For dyslexic students, manipulatives and mind maps can be especially helpful getting a bird's eye view of the subject that can be referred to as students work through problems and are still mastering the concepts. If chosen carefully, they can combine clear examples with new vocabulary such as the example of proper and improper fractions below.





# ELL / ESL READING SUPPORT WITH THE READERPEN & LINGOPEN

Many schools in the U.S. have students learning in their second language, so providing a consistent environment for **English Languages Learners** (ELLs) to immerse and engage in English is essential. Supports like **Text-to-Speech** (TTS) helps these students overcome their comprehension and reading differences.

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# READERPEN

How the ReaderPen Supports ELL Students?



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Portable text-to-speech scanner



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No Wi-Fi or apps required



Support multiple languages -English, French & Spanish



The stars are tiny points of light in the space. On a clear night we can see around 2,000 to 3,000 stars without

# **MATH**

The important thing is to not teach things that students will eventually have to unlearn. When introducing a topic, for instance, it's a common instinct to want to simplify, but if fractions are presented with only a single concept - like sharing with a sibling or classmate or pieces of a pie, then assumptions about the meaning of fractions need to be unlearned with word problems like the following:

"Eight people go camping for 3 days and they must carry their own water. They read that 12 1/2 liters of water are need for a party of 5 people per day. How much water should they carry?"

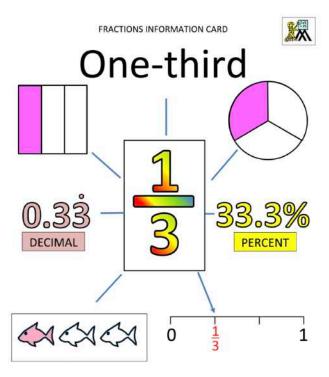
Where are the pieces of pie?

Common Core Math has tried to address this confusion about fractions (half of middle school-age students have basic misconceptions about fractions) by presenting multiple representations of fractions - and this lends itself well to mind maps or wall charts in classrooms.

Math Salamanders has free printables with multiple representations of different fractions.

Allow students to work "open book" with math materials until they have learned the concepts well.

Many dyslexic students prefer inductive learning or learning through direct examples then reasoning back to principles rather than the other way around; the more examples given, the greater the clarity. Provide meaningful explicit, organized examples.





"Summit Center helped me find out I am both dyslexic -- and smart.

I just think differently.

Now I like school, and I have the tools I need to succeed."

# Helping Children, Teens, Adults, and Families Realize Their Potential

assessment | consultation | treatment

Summit Center specializes in helping students with complex learning profiles and differences — including kids who may be gifted, and those who might be both gifted and have challenges (known as twice-exceptional or 2e). We provide formal evaluations of strengths and challenges, and offer specific strategies and recommendations to guide growth and maximize potential.



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# IT'S NOT TOO LATE: STEM / STEAM INGENUITY AWARDS



The deadline for our yearly STEM / STEAM Ingenuity awards is May 15th.

# Apply **HERE**.

Encourage a K-12 student you know to enter. Our goal with these awards is to encourage kids to do something that builds on their curiosity, interest in making things, and making businesses.

Students can work in groups as long as at least one member of the group is dyslexic and they made significant contributions to the ideas and design of the project. Projects can be wide-ranging. One of last year's top winners made a 3D prototype of a prosethetic finger tip for his grandmother, while our entrepreneurial top winner last year were two sisters who began a pandemic scarf knitting business.

Because invention and ingenuity in the real world often involve conferring with outside experts, we also recommend that applicants contact someone who might provide expert outside opinions to improve the project - this could be a science teacher or real world stem expert who was contacted for their expertise through their website, LinkedIn, or some other means. \* If you have trouble at this step, contact Fernette and she will see if there might be some contact who could provide resources in this department. If you might be willing to provide critique on a project, email us about your availability.

The "A" in "STEAM" also includes the arts or arts and design, so artists are encouraged to enter - but artist entries should solve a problem or uniquely fulfill a need. An example of one past top Ingenuity Award winner was a young furniture maker who repurposed a damaged plank of wood.

Would you be willing to serve as an expert mentor for a STEM / STEAM / entrepreneurship project? If so, sign up <a href="#">HERE</a>.

If you're on the fence as to whether you should encourage your student to enter this program, do it. Every entry also gets feedback on their ideas and projects and in some cases it improves their chances of winning next year.

There is nothing so motivating as success and being recognized for your good ideas and that is the real motivation behind these awards programs.

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# **DYSLEXIA NEWS**



**Dyslexic Disruptor - David Lucchino Reversing Hearing Loss** 

**Forbes** 



Ohio to Require Dyslexia Screening

**News 5 Cleveland** 



30 Years After My Dyslexia Diagnosis, My Son's Teacher Can't Spot His Grazie Daily



Department of Education: How IDEA Applies to Private Schools

**Disability Scoop** 



Dyslexia Isn't a Weakness, It's a Strength

**Creative Brief** 



How HR Can Help Dyslexic Employees

**HR Magazine** 

# **Dyslexic Advantage** PREMIUM MAGAZINE



- FROM HIGH SCHOOL DROPOUT
   TO ENGINEERING VP
- TACKLING HIGHER MATH
- IF YOUR STUDENT CAN'T WRITE
- ASSESSING KNOWLEDGE AND ABILITIES - SCHOOL & WORK

# PREMIUM



# **APRIL 2022 ISSUE**

- How Families Help
- High School Drop Out to Engineering VP
- Tackling Higher Math
- If Your Student Can't Write
- Assessing Knowledge and Abilities: School and Work

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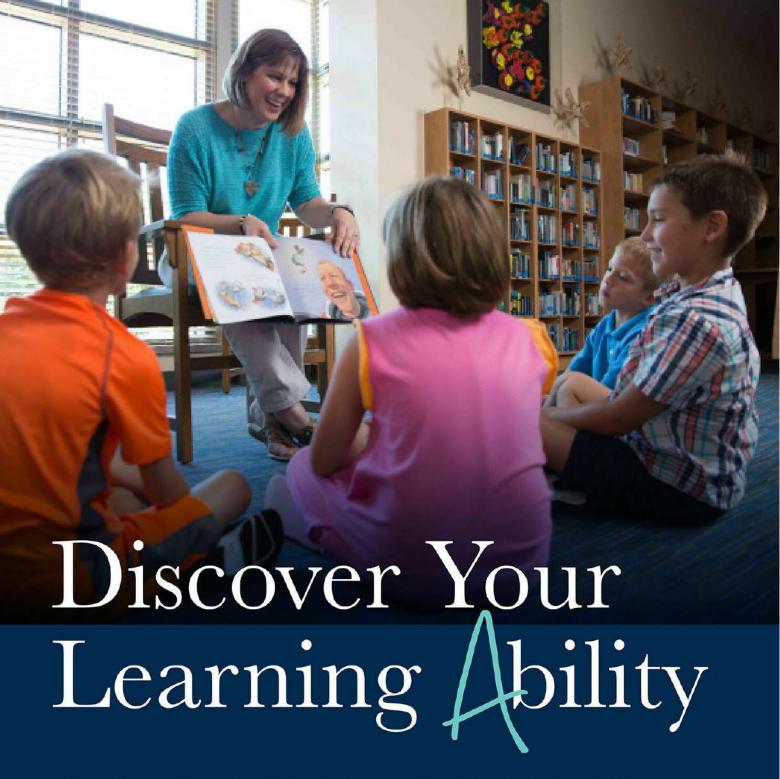


# **PREMIUM**



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# DYSLEXIC ADVANTAGE INGENUITY AWARDS K-12 DYSLEXIC STUDENTS



**ENTER our STEM INGENUITY AWARDS by May 15th!** 

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We're giving over \$1000 in prizes! Science, technology, math, engineering, and design. We also have a young entrepreneur's award! We want to see your work and ideas!

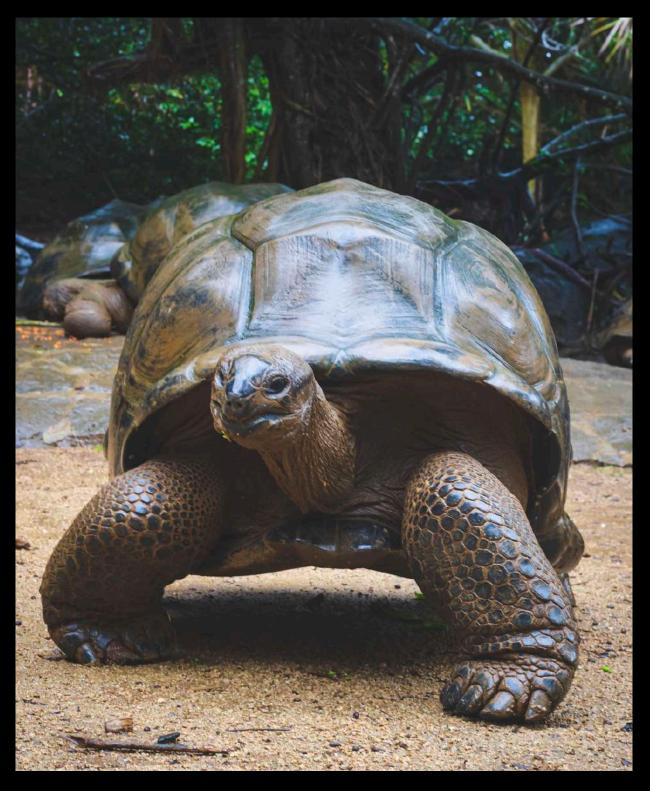
# Last year's amazing winners. Check out their projects in the June 2021 Newsletter.











"Some of us are turtles; we crawl and struggle along, and we haven't maybe figured it out by the time we're 30. But the turtles have to keep on walking."

- John B Goodenough, Nobel Prize winner, inventor of the lithium battery.