

SUMÁRIOS CORRENTES



V.19 – N. 02
Fevereiro 2013

MUSEU DE ASTRONOMIA E CIÊNCIAS AFINS
Coordenação de Documentação e Arquivo
Serviço de Biblioteca e Informação Científica

APRESENTAÇÃO

A publicação "Sumários Correntes", entrou em 2008, em uma nova fase de sua vida. Na busca de atender cada vez mais interessados nas áreas de Divulgação Científica, História da Ciência, Museologia, Documentação e Arquivologia, passou a ser disponibilizada on-line no portal do MAST com periodicidade mensal.

A relação de todos os títulos que fazem parte dos Sumários está anexada ao fim da publicação. Eles possuem periodicidade variada.

Os interessados em solicitar cópia dos artigos deverão preencher o formulário, disponível no link da Biblioteca, e enviá-lo das seguintes formas: por e-mail, fax ou correio.

Críticas e sugestões serão bem aceitas para o fortalecimento e aperfeiçoamento do nosso trabalho.

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Periodicidade: Mensal

Acesso: www.mast.br

Desenho da capa: Ivo Antonio Almico

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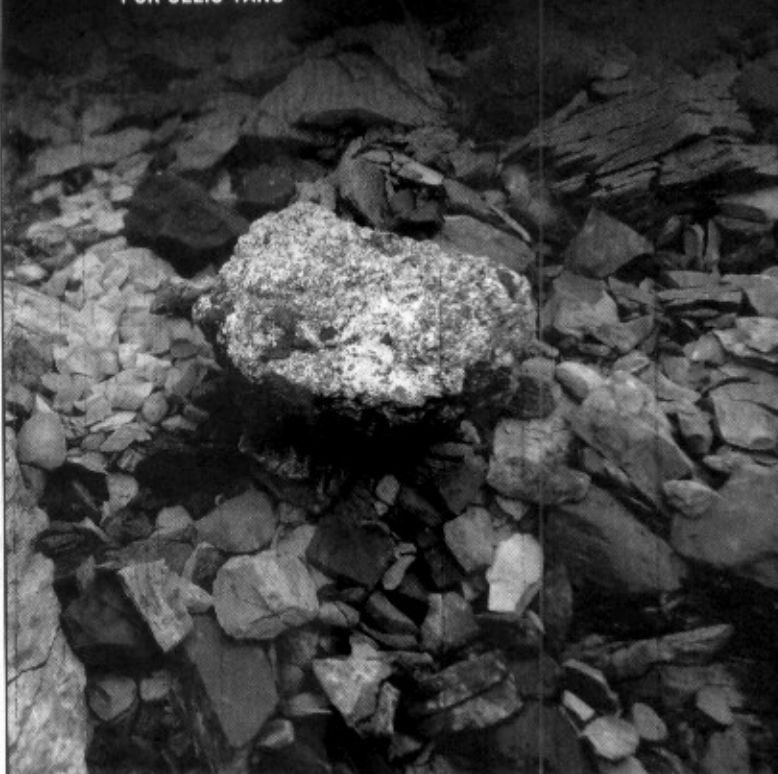
- 4 **o leitor pergunta** | Os medicamentos biológicos são seguros? | Em que consiste e para que serve a câmara anecoica? Ficar sozinho muito tempo em uma delas pode enlouquecer alguém? | Por que alguns dinossauros – herbívoros e carnívoros – eram tão grandes?
- 6 **ch on-line**
- 7 **exatamente** | ENQUANTO HOUVER SOL | Uso de novos materiais pode ampliar produção de energia elétrica a partir da luz solar
- 8 **entrevista** | EDWIN BERGIN | VIDA EXTRATERRESTRE | Astrobiólogo fala da origem da vida e de candidatos a abrigar seres vivos fora da Terra
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- 45 **PROTEÍNA DO LEITE COM FERRO** | Tratamento da anemia ganha reforço com suplemento que aumenta absorção do nutriente
- 46 **QUESTIONANDO O PATRIARCADO** | Estudo revela poder político de mulheres da elite rural baiana no início do século 20
- 47 **DE ONDE MENOS SE ESPERA** | Composto que auxilia combate ao câncer é obtido de glândula salivar do carrapato
- 48 **TODOS GANHAM** | Fungos que ajudam absorção de fósforo podem reduzir uso de adubos químicos
- 49 **PRECISÃO CIRÚRGICA** | Começa este ano fase de testes de primeiro bisturi ultrassônico projetado no país

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A extração de carvão mineral na região Sul gera polêmica. Esse combustível, o mais abundante no planeta, é tido como indispensável por seus defensores, mas apontado por outros como ultrapassado e prejudicial ao ambiente e à saúde dos trabalhadores.

POR CÉLIO YANO



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O azul dos mares e oceanos, que provoca admiração, foi por algum tempo assunto de pesquisa científica. Após uma viagem de navio em 1920, um físico indiano estudou a origem dessa cor e o que descobriu levou a uma técnica hoje largamente usada em laboratórios.

POR ILDE GUEDES, JOSÉ EVANGELISTA MOREIRA
E CLENILTON C. DOS SANTOS

SEXOLOGIA E PSICANÁLISE: A CIÊNCIA E OS ASSUNTOS ÍNTIMOS NO RIO DE JANEIRO DO INÍCIO DO SÉCULO 20

A educação sexual e os problemas associados ao sexo não são temas recentes no Brasil. No início do século passado, no Rio de Janeiro e em outras cidades, essas questões eram debatidas em jornais, rádios, livros, revistas e consultórios de psiquiatras.

POR JANE RUSSO E SÉRGIO CARRARA

A MULTIDIMENSÃO DA DIVERSIDADE

A destruição ambiental pode extinguir grande parte da diversidade biológica, antes que seja conhecida. Algumas plantas brasileiras, como o alecrim-do-campo, exibem valores múltiplos, que tornam relevante a busca de maior conhecimento a seu respeito.

POR G. WILSON FERNANDES, YUMI OKI,
ISABELA M. DO NASCIMENTO, CAMILA E. MENDES DE SÁ,
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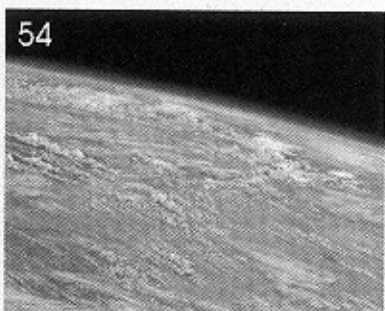
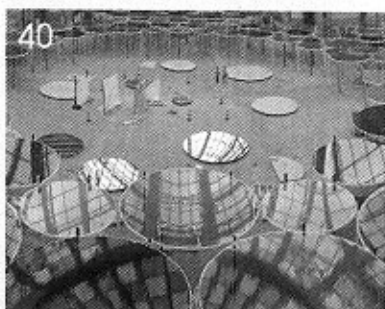
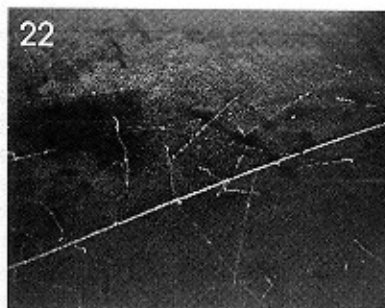
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- 51 **ACERVO AMAZÔNICO** | Maior número de espécies de peixes em todo o mundo é encontrado no rio Madeira
- 57 **futuro cientista**
- 58 **ensaio** | **ENGARRAFAMENTOS** | Conceitos da física ajudam a explicar retenções no trânsito e indicam soluções
- 61 **cidade inteira** | **DESCOMPASSO URBANO** | Distribuição política de cargos afeta setores públicos que cuidam das cidades
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- 62 **DISTANÁSIA**: POR QUE PROLONGAR O SOFRIMENTO? | Evitar tratamentos inúteis em pacientes terminais é atitude ética
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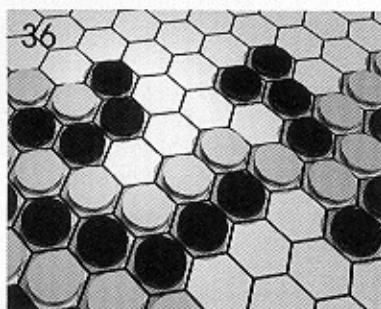
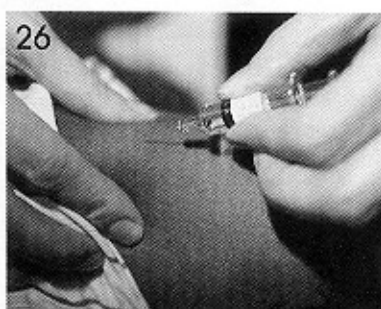
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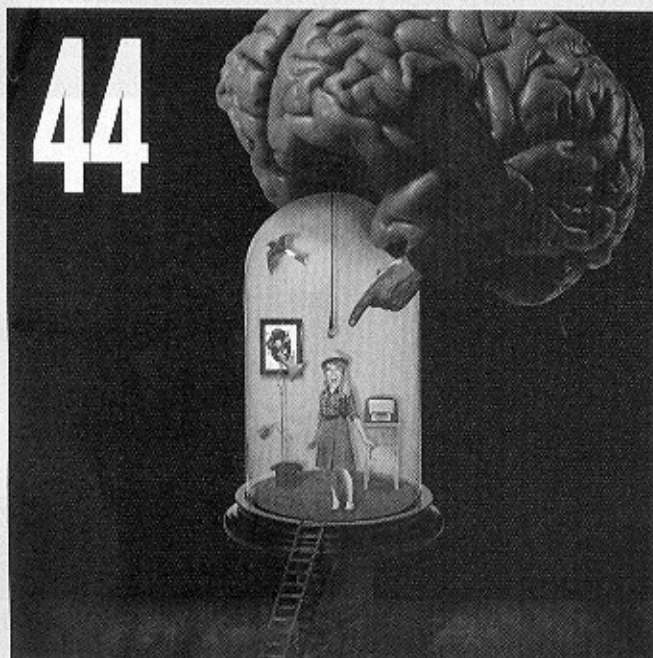
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Bruce Betts recaps those exciting first few moments in August.

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Donna Stevens looks back at our celebration of *Curiosity's* landing.

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Incredible Upgrades

Bruce Betts reports on upgrades to Optical SETI hardware and more.

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Planetary Society Kids Why is Mars red?

Why We Explore

Celebrating 50 years out in the solar system, *Paul Schenk* looks at the missions and milestones that brought us to today.

The Battle Continues

Casey Drier files an update on the state of the U.S. budget and the Society's efforts to make sure NASA's budget is spared.

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21 **Factinos** We found a streambed on Mars!

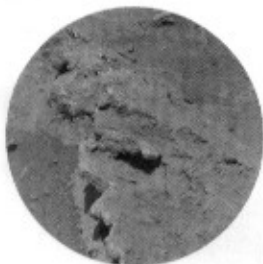
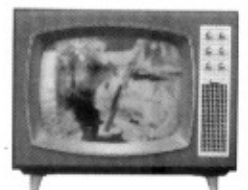
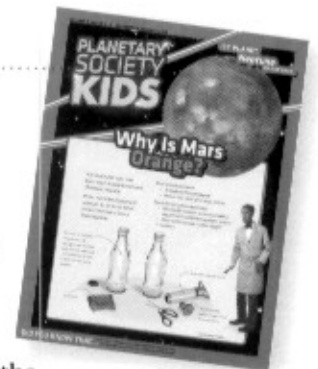
22 **Planetary Radio** See what's going on in this insightful podcast.

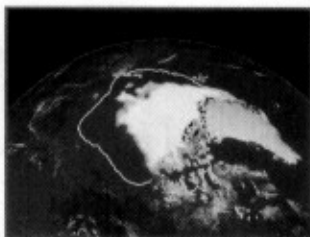
23 **MySky** Historical photos and other-worldly clouds.



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La couverture gelée de l'océan Arctique a fondu spectaculairement entre mars et septembre. Résultat, elle a atteint sa plus petite extension depuis qu'on a commencé à la surveiller, en 1979. De quoi relancer les spéculations sur la disparition des glaces de mer en été dans la région.

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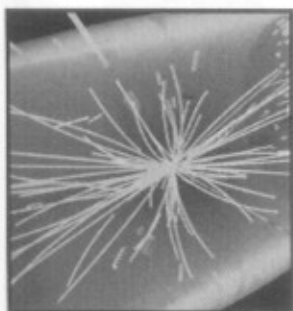
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Fall 2012

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Museum Education

A PUBLICATION OF THE MUSEUM EDUCATION ROUNDTABLE

VOLUME 37 • NUMBER 3 • FALL 2012

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Science & Children

NSTA's peer-reviewed journal for elementary teachers

The symbol  identifies content related to this issue's focus:

HARD-TO-TEACH CONCEPTS

GRADE 3

35 More Is Less

Adding details to reduce complexity and help prevent misconceptions

Aaron Willey and Michelle Klosterman

GRADES 3 - 5

42 Big Ideas for Little People

A computer-based curriculum helps fourth graders understand evolution.

Cynthia McIntyre, Trudi Lord, and Paul Horwitz

GRADES K - 2



46 Storybook Science

How a picture book brought the concept of change in position to life

Mark Enfield and Eliza Mathew

GRADE 4

50 How Does Force Affect Motion?

Fighting children's misconceptions with the "fantastic-four" ways in which force affects motion

Gerald Darling

GRADE 5



54 Changes Matter!

Addressing student misconceptions about physical and chemical changes

Kimberly Lott and Anitra Jensen

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62 May the Magnetic Force Be With You

Using concrete activities to confront misconceptions about magnetism in the primary grades

Jesse Wilcox and Lindsey R. Richey

GRADE 1

68 Experiencing Friction in First Grade

Students explore friction and use technology to collect data.

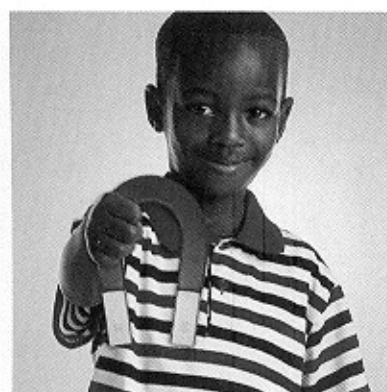
Bill Burton

GRADE 3

73 The Spider Files

Firsthand experience with spiders debunks student misconceptions

James McDonald and Lynn Dominguez

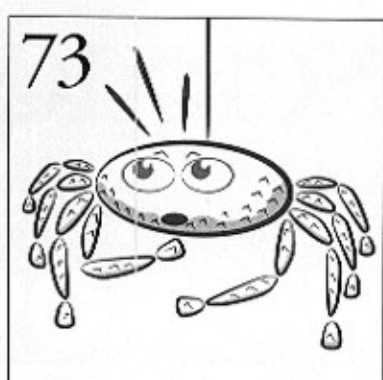


Some science topics are more difficult for students to grasp than others. This issue offers ideas for approaching these hard-to-teach concepts to increase student understanding.

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Science & Children

NSTA's peer-reviewed journal for elementary teachers



Teacher Resources

13 Exploring the New Standards

How to form a study group to examine the *Next Generation Science Standards*, second public draft
Ted Willard, Harold Pratt, and Cindy Workosky

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Energy Makes Things Happen

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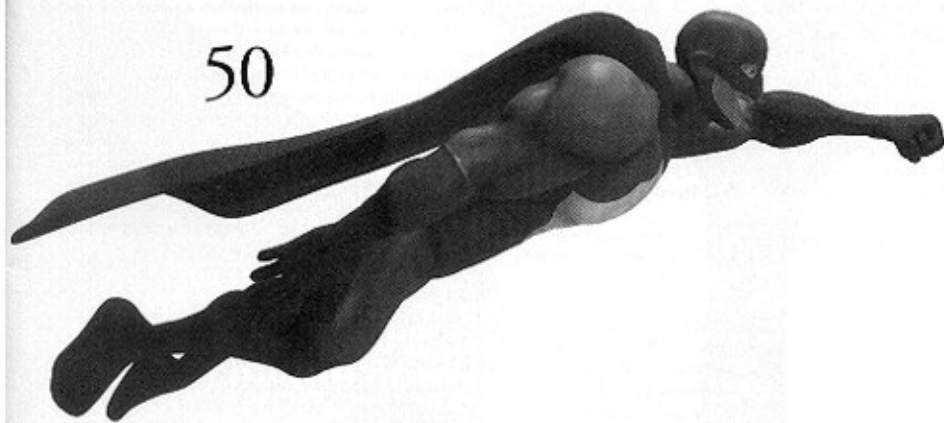
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VISUAL LITERACY



Just as we teach students to read, we must also teach them how to be visually literate. This issue offers ideas for making sure students can interpret the visual images that are so present in our lives.

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GRADE K

- **36 Soil Science in the Digital Age**
Kindergartners gain meaningful experiences in Earth science while learning how to answer questions.
Vance High and Laura VanHorn

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- **41 Valuing Little Steps Toward Inquiry**
Nurturing the smaller notions of inquiry build toward a greater understanding.
David Grueber and Phyllis Whitin

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- **46 Hats Off to Science**
Students bring vocabulary to life by creating science-themed hats for a fifth-grade parade.
Julie K. Jackson and Nancy Newell

GRADE 3

- **52 A Winning Combination**
Interactive word walls and the language of science
Erinn L. Henrichs and Julie K. Jackson

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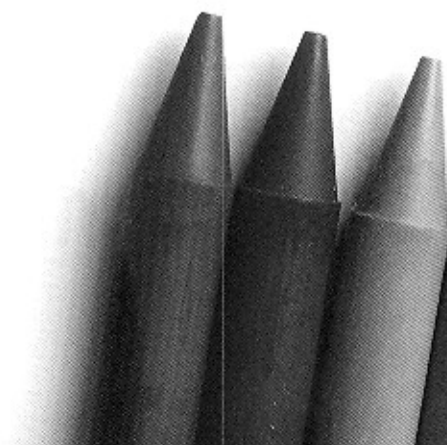
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A museum setting incorporates language arts into science lessons.
Arlene Hayman, Carole Hoppe, and Hasan Deniz

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Using Marker Sparkers and graphic organizers to support science understanding
Dara Williams-Rossi and Laurie O. Campbell

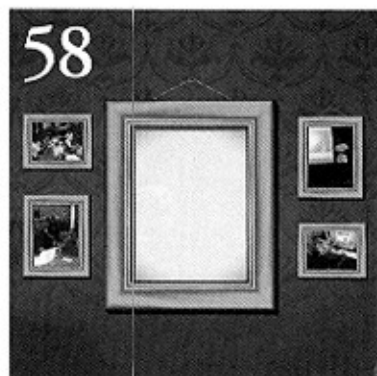
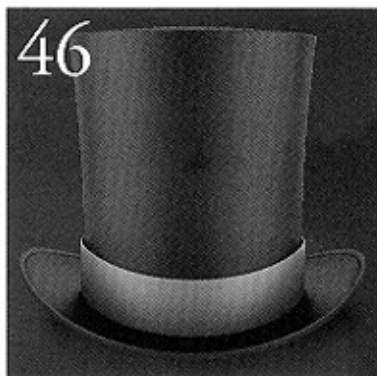
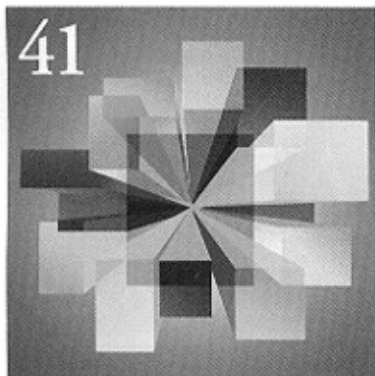
GRADES 2 - 5

- **68 Drawing Out the Artist in Science Students**
In-class drawing instruction gives students the skills and confidence to make more accurate scientific diagrams.
Al Camacho, Cary Benenson, and Carmen Patricia Rosas-Colin



Science & Children

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11 Exploring the Science Framework

*Philip Bell, Leah Bricker,
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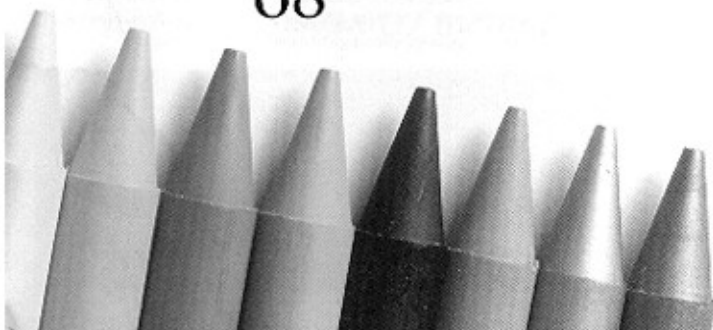
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The symbol  identifies content related to this issue's focus:

BUILD IT!

GRADES K - 2

34 It's No Problem To Invent a Solution

Kindergarten students explore inventions and create their own.
Rose M. Graca

GRADES 2 - 4

40 The Science of Safety

Students explore engineering with model cars and ramps.
Jill Jensen

GRADES K - 6

46 Just Right

Students design a model house and learn about the properties of materials.
Kristen B. Wendell

GRADES 3 - 5

54 Limestone or Wax?

Students are challenged to make engineering choices based on material properties.
Kristin Sargianis, Cathy P. Lachapelle, Christine M. Cunningham, Jean Facchiano, Cheryl Sanderson, and Patricia Slater

GRADES 3 - 6

62 The Great Build-A-Buoy Challenge

An engineering challenge seamlessly integrates science, technology, and math.
Daniel Dickerson, Stephanie Hathcock, Frank Stonier, and Doug Levin

GRADES K - 6

67 Family Style Engineering

Learning alongside students creates a win-win situation for all.
Lara K. Smetana, Joan Chadde Schumaker, Wendy S. Goldfien, and Cheryl Nelson



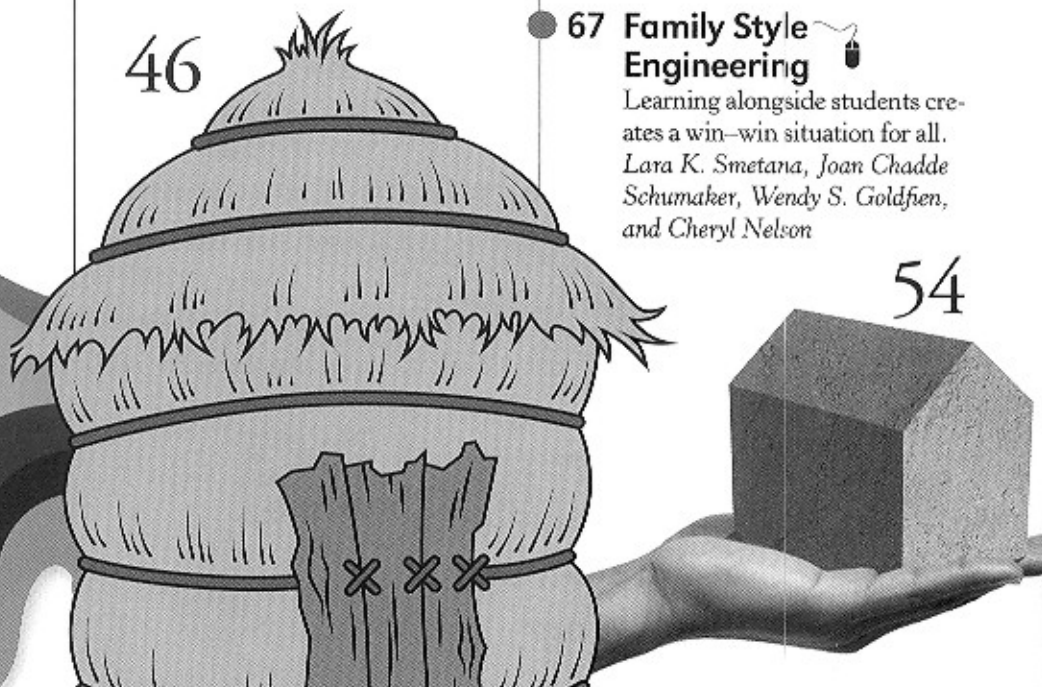
Asking students to "build it" begins before they pick up a block. The many steps of planning and designing, beginning with understanding the properties of materials, are important for supporting students' conceptual development.

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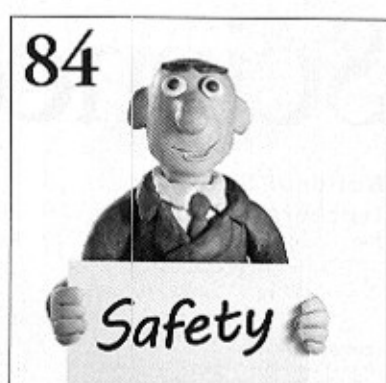
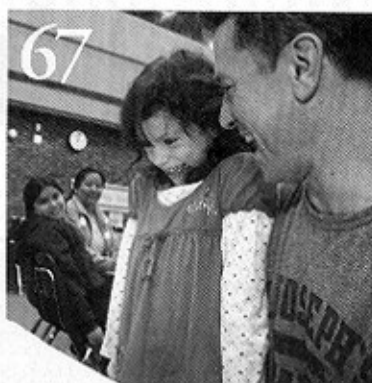
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Robert Mayes and Thomas R. Koballa, Jr.

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Bridges and Skyscrapers

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Please Touch Museum

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When necessary, safety symbols are provided throughout this issue to help you make your classroom as safe as possible.



Look for the sciLINKS icon throughout the issue for web links to accurate, age-appropriate content and pedagogy.

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HISTÓRIA DA CIÊNCIA

Archives Internationales D'Histoire de Sciences
Vol. 62, N. 168, Junho 2012

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Musée imaginaire Les automates ou la mécanique du merveilleux

Avec ses horloges à figures, ses automates, ses machines à vapeur, ses robots, ses avions, ses fusées, ses vaisseaux spatiaux, le Musée imaginaire est une véritable encyclopédie de la science et de la technique. Il est le fruit de la collaboration de nombreux auteurs et illustrateurs, et il est devenu un véritable culte. C'est un livre qui fait rêver, qui fait découvrir, qui fait apprendre. C'est un livre qui est indispensable à tous ceux qui s'intéressent à la science et à la technique.

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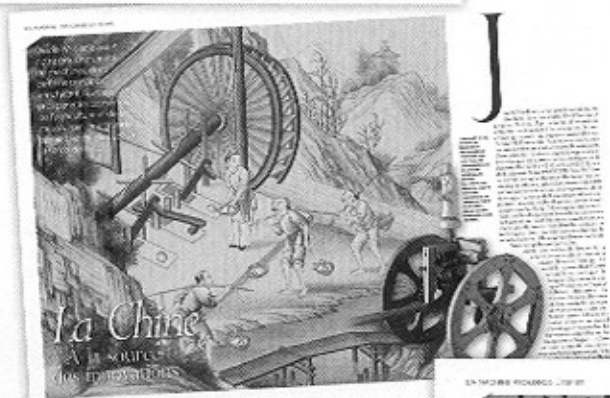
Des premiers
automates du
Moyen Âge
aux robots
humanoides
du xx^e siècle:
une galerie des
machines les plus
remarquables.



L'homme et la machine

42

Dès l'Antiquité,
les Chinois ont
fait preuve
d'une grande
inventivité dans
les sciences et
techniques.
Leurs trouvailles
auront un grand
impact sur le
monde moderne.

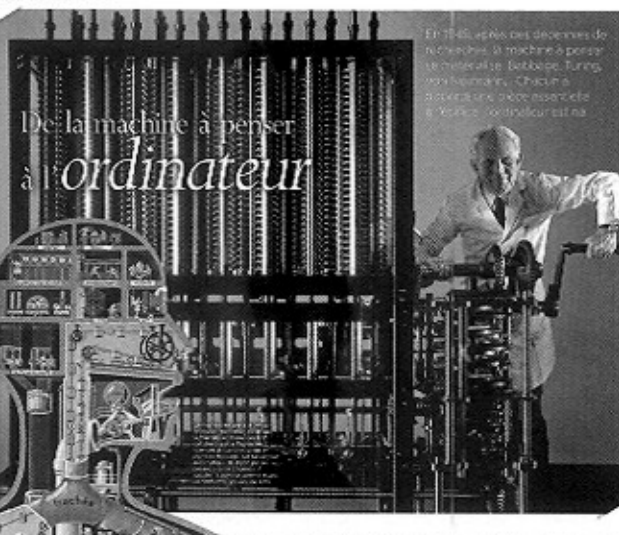


La Chine À la source des inventions

J

La Chine est le berceau de nombreuses inventions, dont certaines ont eu un impact majeur sur le monde moderne. C'est le cas de la poudre à canon, de l'imprimerie, de la boussole, et de bien d'autres encore. Ces inventions ont permis à la Chine de devenir une grande puissance mondiale, et elles ont également influencé le développement de la civilisation occidentale.

LA MACHINE MODERNE, L'ÉTAT



De la machine à penser à l'ordinateur

En 1845, après des décennies de
recherches, la machine à penser
de Charles Babbage, Turing,
von Neumann, Chacun a
développé une approche différente
à l'ordinateur.

Les ordinateurs sont devenus une partie intégrante de notre vie quotidienne. Ils nous aident à travailler, à apprendre, à nous divertir. Mais comment ont-ils été inventés ? C'est l'histoire de la machine à penser, de la machine à calculer, de la machine à penser. C'est l'histoire de la machine à penser, de la machine à calculer, de la machine à penser.



Génie grec pragmatisme romain

36

Grecs et Romains
n'ont pas la
même approche
de la machine.
Les premiers,
rompus au savoir
mathématique,
ont innové;
les seconds,
pragmatiques,
ont développé
des machines
existantes.



Réanimer des mécanismes oubliés

76

Au milieu du xx^e siècle, après de longs
tâtonnements, des scientifiques ont réussi le pari
fou de concevoir la toute première « machine
à penser », qui deviendra l'ordinateur...

8

Quels moyens
met en œuvre
la recherche,
aujourd'hui, pour
reconstituer
les machines
d'autrefois et
restituer leurs
mécanismes ?

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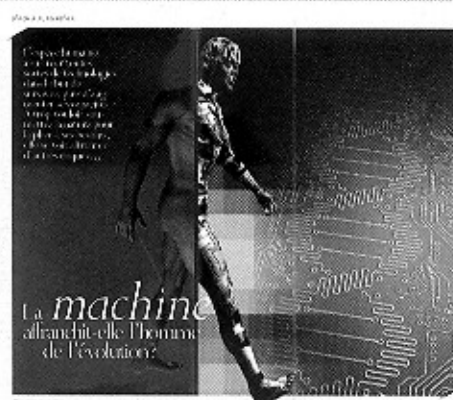
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L'homme a construit des machines l'aidant à vivre dans des milieux hostiles. Ne s'est-il pas, ce faisant, soustrait de la sélection naturelle ?



P

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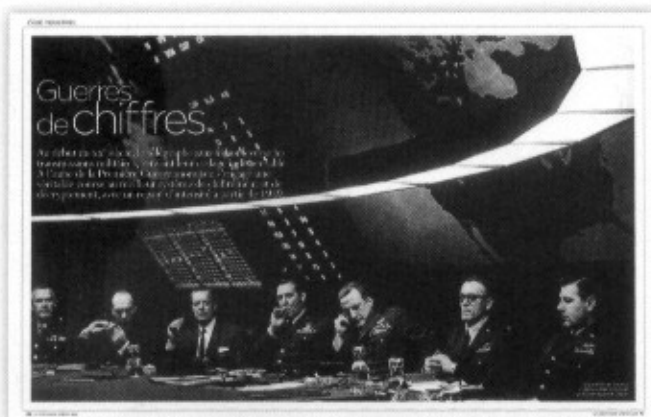


6
Partout et à toutes les époques, les systèmes de codage ont existé, devenant, avec la modernisation des modes de communication, de plus en plus sophistiqués.

20
Dès l'Antiquité, les sociétés ont cherché à camoufler ou à crypter certaines de leurs communications personnelles, politiques, militaires.



64
La littérature recèle des messages chiffrés, héros ou personnages secondaires, dont le décryptement dénoue ou relance les intrigues...



80
Systèmes de déchiffrement, machines à encoder, de 1914 à 1945, les deux guerres mondiales ont été le théâtre d'une véritable course aux meilleurs codes secrets.

Codes et langages secrets



56
L'histoire serait tout autre sans les secrets qui ont jalonné des relations diplomatiques et militaires. Quelques codes à déchiffrer, de Marie Stuart à Marie Antoinette...

Les Cahiers Science & Vie

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À l'ère d'Internet, des informaticiens de génie conçoivent des programmes de plus en plus complexes pour chiffrer les informations échangées sur la Toile.

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