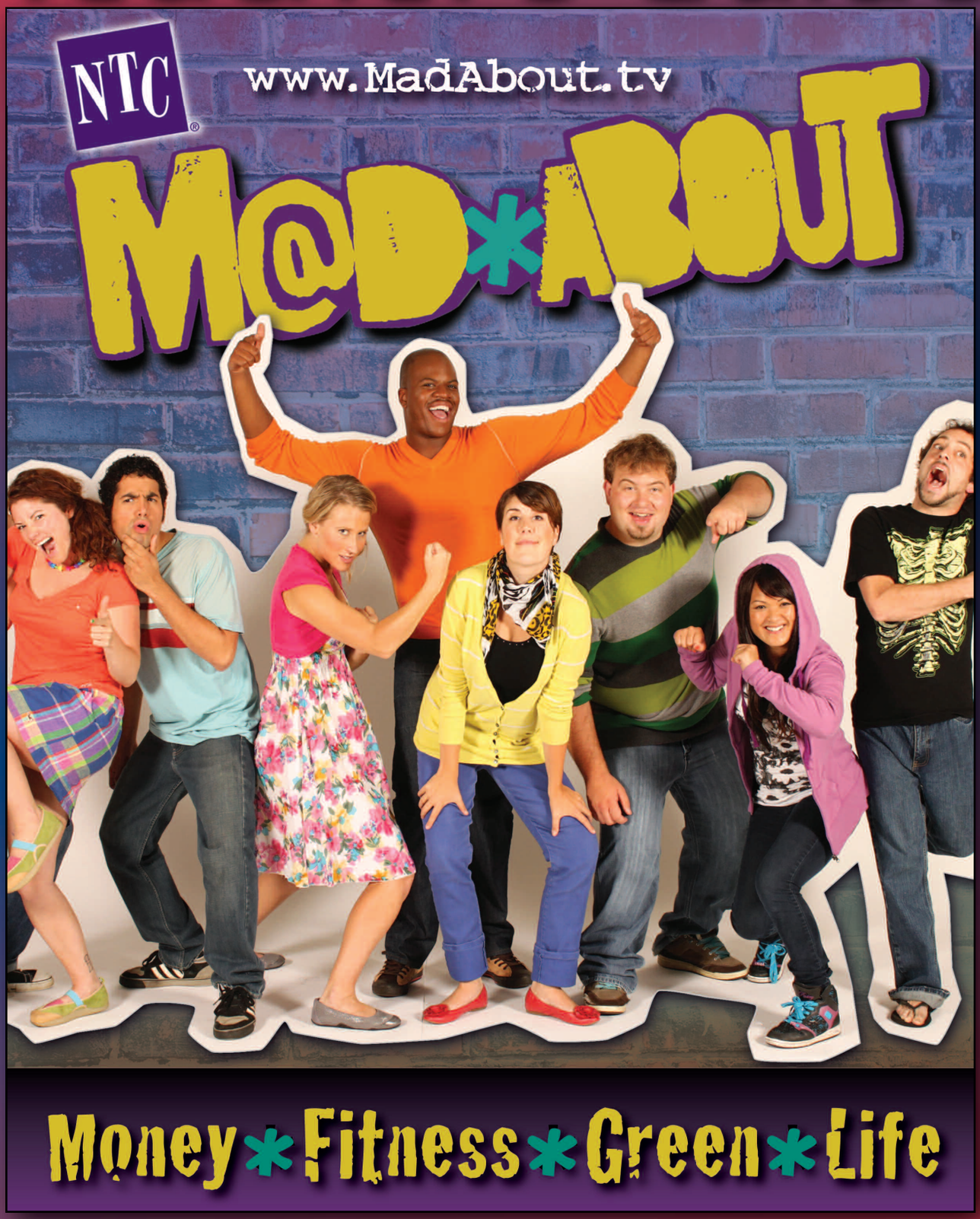
Teacher's Guide



Explanation of activities • Classroom exercises
Additional resources and information

Dear Educator:

On behalf of The National Theatre for Children, we welcome you to ***M@dAbout!***

During the performance your students will learn information they need to become responsible decision makers, specifically in the areas of the Financial Literacy, Fitness, Environment, and Life.

This Teacher Guide contains sample lesson plans, fun facts and vocabulary words. The guide is best used with the classroom workbooks after the ***M@dAbout*** production.

The National Theatre for Children values your feedback and wants to provide you and your students with excellent materials and performances. After the show, would you please evaluate the ***M@dAbout*** production and classroom workbooks? Your comments will help improve future productions and materials.

Thanks and enjoy the show!

HEY, TEACHERS!

You've seen the show! Now evaluate the program!

To evaluate the ***M@dAbout*** production and classroom materials:

1. Log on to: ***www.playworks.com***

2. Enter the Code MA1F10M

3.Fill out the evaluation!

Simply by filling out an online evaluation, **you are eligible to win $250 of FREE books for your classroom or school library!**

Thanks and Good luck!

The National Theatre for Children, Inc.
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1-800-858-3999
www.nationaltheatre.com

Energy and Resources: How are Energy and Resources Related?

Objectives
Students will identify how energy and resources are related

Subjects
Science and Social Studies

Skills
Prediction, Analysis, Creativity

Duration
30-minute class period

Materials Needed
- ***M@dAbout*** *Student Workbook*
- *Plastic 1-liter bottle*
- *Large balloon*
- *Bowl of hot (not boiling) water*
- *Bowl of ice water*
- *Small rock or paper clip*

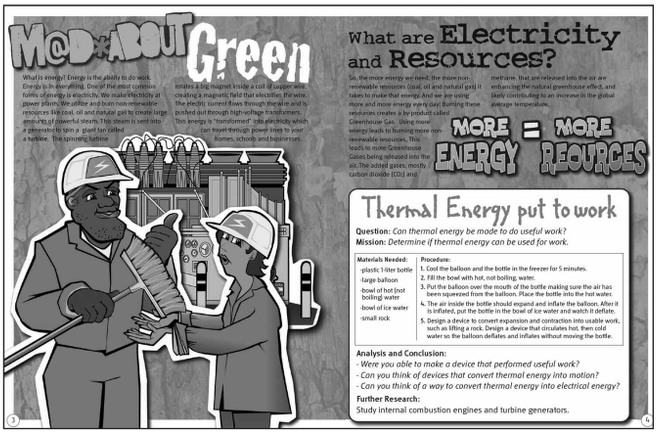
Activity Directions
Before doing this activity review with students the How are Energy and Resources related section of the workbook. Students should have some prior knowledge on energy and resources. If not, have them do some research before hand.

1. Ask students how thermal energy can be made to do useful work.

2. Tell students you are going to demonstrate a simple activity using thermal energy. Cool the balloon and the bottle in the freezer for 5 minutes. Fill the bowl with hot, not boiling, water.
   - Put the balloon over the mouth of the bottle making sure that the air has been squeezed from the balloon.
   - Fill the bowl with hot, not boiling, water.
   - Place the bottle into the hot water.
   - The air inside the bottle should expand and inflate the balloon. After it is inflated, put the bottle in the bowl of ice water and watch it deflate.

3. Discuss with students why the balloon expanded and contracted during the activity.

4 Break students into small groups.



5. Tell them they will be designing a device to convert the expansion and contraction of the balloon activity into usable work, such as lifting a rock or paper clip. Allow students to use materials found in the classroom to make their device. Give students enough time to create a simple device.

6. Have the groups try their device with the balloon activity with your guidance. Were students able to make a device that performed useful work? Using the balloon to lift a paper clip or rock will demonstrate work.

7. As a class discuss what students observed during the activity. Ask students how resources like coal, oil and natural gas would be used to create electricity at a power plant. Are there other ways we use heat energy to do work? Do automobiles use this concept? Or small engines?

8. Ask students if they can think of devices that convert thermal energy into motion. Internal combustion engines would be an example.

9. Can you think of a way to convert thermal energy into electrical energy? Most power plants work on this principle. They convert heat from burning resources into steam from boiling water. This steam is used to spin a turbine which generates electricity.

Extension Activity
Challenge students to create a device that will convert wind energy into motion.

Energy Balance: Exercise Can Be Many Things!

Objectives

1) Students will understand what energy balance is and why it is important
2) Students will keep track of daily activities
3) Students will realize that a healthy diet and daily exercise is essential for a healthy body

Subjects

Math, Consumer Science, Physical Education/Health

Skills

Estimation, Multiplication, Division, Addition and Subtraction, Analysis

Duration

One class period

Materials

Copy of activity level chart below for each student
Calculators

Activity Directions

Explain to students that they expend energy no matter what they're doing, even when sleeping!

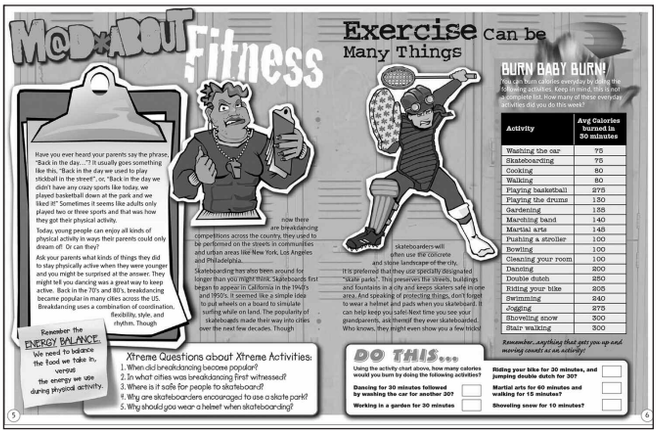
Use the activity chart in the student workbooks to complete the following activity:

1. Tell students that anything that gets you up and moving counts as physical activity.
2. Have students keep track of all their activities for one day and calculate their total number of calories burned.
3. Have them use the numbers from the activity chart for their calculations. Students may need to multiply or divide the number of calories by the time they spent on each activity.

Activity	Avg Calories burned in 30 minutes
Washing the car	75
Skateboarding	75
Cooking	80
Walking	80
Playing basketball	275
Playing the drums	130
Gardening	135
Marching band	140
Martial Arts	145
Pushing a stroller	100
Bowling	100
Cleaning your room	100
Dancing	200
Double Dutch	250
Riding your bike	205
Swimming	240
Jogging	275
Shoveling snow	300
Stair walking	300

Example: Walking for 20 minutes would be:

80cal/30min = 2.66cal x 20min = 53.3cal burned.



Did You Know?

Our metabolism slows down as we age making it harder to maintain energy balance. Getting into the habit of doing physical activities at a young age, along with a healthy diet, will help to create energy balance as we get older.

Extension Activity

Challenge students to find their Basal Metabolic Rate and calculate the number of daily calories their body needs based on their activity level. The formula for finding their BMR is:

Boys: BMR = 66 + (6.3 x body weight in lbs.)
+ (12.9 x height in inches)
– (6.8 x age in years)

Girls: BMR = 655 + (4.3 x body weight in lbs.)
+ (4.7 x height in inches)
– (4.7 x age in years)

Once students have their total number of calories burned from their daily activities have them add that number to their BMR number. This will give them a new number which will be the approximate number of calories they should be consuming each day to achieve an energy balance.

Discuss as a group the following questions:

–*What would happen if you consumed more calories than your body needed?*

–*What would happen if you increase your activity level but not your calorie intake?*

–*How do the types of foods you eat affect your energy balance?*

How to Value Your Individuality: Celebrate You!

Objectives

1) Students will reflect on what makes them special and unique
2) Students will appreciate and respect themselves and their individuality
3) Students will create a list of positive statements about themselves

Subjects

Health, Communications, Consumer Science

Skills

Recognition, Reflection

Duration

One class period

Materials Needed

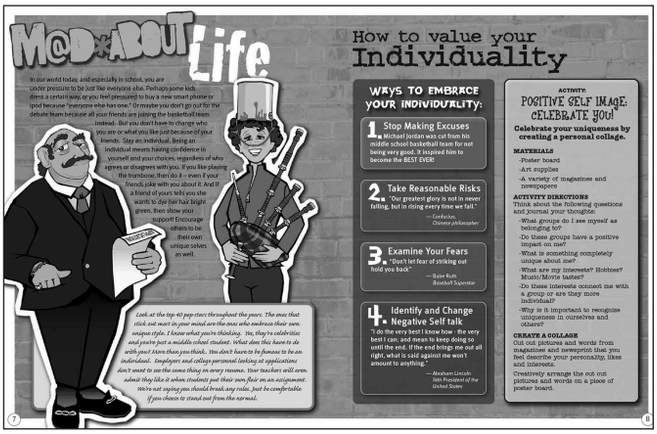
- *Paper*
- *Construction Paper*
- *Markers*
- *Glue and Scissors*

Activity Directions

1. Write the word GROUP on the left side of the whiteboard/chalkboard.
2. As a class, come up with a definition for the word and create a list of things, people, ideas, etc. that would fit under the definition of the word GROUP.

   Example: Republicans/Democrats; Liberal/Conservative; Youth/Adult; Jocks/Nerds; Popular/Unpopular, etc.
3. Write the word UNIQUE on the right side of the board.
4. As a class, come up with a definition for the word and create a list of things, people, ideas, etc., that might fit under the definition of UNIQUE. The possibilities are endless!
5. As a class, discuss why it might be important to be part of a group.

   Example: Camaraderie, to fit in, similar interests, team work/collaboration, etc.
6. Discuss why it is important to recognize uniqueness in ourselves and others.
7. Tell students they will be making a positive statement about each of their peers.
8. Have students cut strips of white paper – one for each class member.



9. Tell students to think about each person in class and write down one positive thing about each.
10. Having students sign the slips is optional.
11. Once everyone is finished, have students get up and walk around the classroom putting the appropriate strip on each person's desk.
12. Give students 5 minutes to read all the slips with positive comments about them.
13. Encourage students to write one thing about themselves that is truly unique. Have them add this to their slips.
14. Tell students they will now glue their strips onto colorful construction paper.
15. Have students come up with a creative title for list of slips.
16. Encourage students to hang the list in their locker where they can see it everyday!

One minute before the end of class ask students to give themselves a hug and do a group shout-out: I ROCK!

Teachers play an important part in helping students feel good about themselves. Middle school students' self-esteem is particularly vulnerable to blows from their peers. Middle school students are not only adjusting to a more challenging school environment, but they are also dealing with huge physical and emotional changes. Their feelings of self-worth are beginning to be formed through their interactions with their peers. Here are a few ways you as a teacher can encourage positive communication and collaboration in your classroom:

- *Encourage positive language. Do not tolerate put downs!*
- *Frequently mix groups up so that students will get to work with and know others besides their friends.*
- *Create a safe environment that allows students to take risks and participate in class.*

Importance of Forming a Savings Habit: Pay Yourself First!

Objectives

Students will recognize the benefits of forming a savings habit while they are young

Subjects

Math, Consumer Science, Social Studies

Skills

Computation, Collaboration, Critical Thinking, Reasoning

Duration

30-minute class period

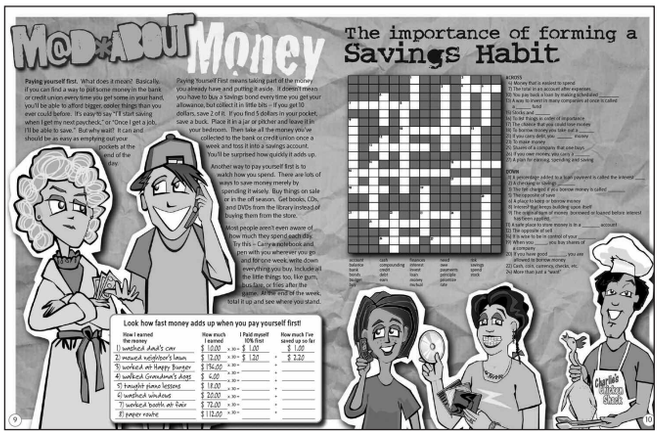
Materials

- ***M@dAbout*** *Student Workbook*
- *Calculator*

Activity Directions

Facilitate and discuss the Forming a Savings Habit section of the M@dAbout student workbook prior to doing this activity.

1. Have students take a few minutes to jot down their thoughts on the following questions:
   a) How do they get money? Allowance? A part-time job?
   b) What do they do when they get money? Do they spend it all at once?
   c) List ways they might earn money (income) in a week.
2. Encourage students to share their thoughts. As a group, discuss students' varied responses.
3. Discuss as a class the following questions:
   a) How do people receive income?
   b) Who saves?
   c) Why is saving important?
4. Present the following scenario to the students: Over the course of a week, they will earn different income. They get a $10 allowance, earn $25 at a part time job, their grandparents give them $20 for their birthday and a friend returns the $5 he borrowed from them. Divide the class into 3 groups and assign each one different factors:
   a) One group saves 5% of their income
   b) A second group saves 10% of their income
   c) A third group saves 15% of their income
5. Have students in groups answer the following questions:
   a) What was their total income earned in one week?
   b) How much does each group save from their income?
   c) What could each group buy with their savings?
6. Regroup and discuss each group's results.
   a) Revisit the question: Why is forming a savings habit when they're young important?



Extension Activity

Have students look for part-time jobs in the newspaper. Using the given hourly wage, have students decide how much they want to save each week assuming they work 15 hours a week. Tell students to choose an item they would like to purchase, for example, an iPod or a new skateboard. Encourage students to create a chart to keep track of their weekly earnings and savings. Have students calculate how much they will be saving each week as well as how many weeks they will need to work and save in order to purchase the item they want.

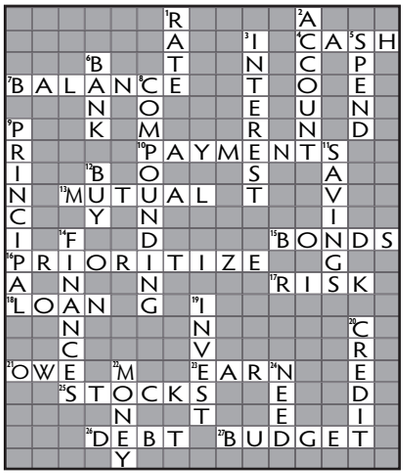
How Fast Money Adds Up Activity Answers

How much I earned	I paid myself 10%	So far I've saved
$ 10.00	$ 1.00	$ 1.00
$ 12.00	$ 1.20	$ 2.20
$ 136.00	$ 13.60	$ 15.80
$ 6.00	$ .60	$ 16.40
$ 18.00	$ 1.80	$ 18.20
$ 20.00	$ 2.00	$ 20.20
$ 72.00	$ 7.20	$ 27.40
$ 112.00	$ 11.20	$ 38.60

PG 10 CROSSWORD PUZZLE ANSWERS

Across
4. cash
7. balance
10. payments
13. mutual
15. bonds
16. prioritize
17. risk
18. loan
21. owe
23. earn
25. stocks
26. debt
27. budget

Down
1. rate
2. account
3. interest
5. spend
6. bank
8. compounding
9. principal
11. savings
12. buy
14. finances
19. invest
20. credit
22. money
24. need



Vocabulary Words:

Conformity: doing what everyone else is doing just to fit in

Conservation: using fewer resources

Efficiency: using resources while creating little or no waste

Electricity: a type of energy used to run TVs, computers, appliances, etc.

Energy: the ability to do work or cause change

Energy Balance: performing enough physical activity to balance out the food you eat.

Exercise: intense physical activity that increases your breathing, heart rate, and calorie usage

Heart Rate: the number of times your heart beats per minute

Individuality: embracing the fact that you are different from everyone else

Interest: extra money paid when money is borrowed or saved

Peer Pressure: giving in to what other people think

Physical Activity: any activity that gets you up and moving

Power Plant: a building where large amounts of electricity is made

Prioritize: to decide which options are most important

Renewable Resource: resources, like solar, wind, and hydro power, that keep coming back

Resource: something used to create energy, either renewable or non-renewable

Savings Account: a service where a bank holds on to your money and pays you interest for storing it

Unique: one of a kind; there is nothing like it

Stay Connected!

Interested in learning more about the M@dAbout topics? Check out these websites:

Financial Literacy Websites

www.jumpstart.org
A national coalition of organizations dedicated to improving the financial literacy of pre-kindergarten through college-age youth by providing advocacy, research, standards and educational resources. Jump$tart strives to prepare youth for life-long successful financial decision-making.

www.MyMoney.gov
MyMoney.Gov is a great resource for teachers and students as well as families. Click on the Money Smart for Young Adults – A Financial Education Program to get a free CD with the Money Smart curriculum. Click on Money Management for Teens to access printable financial curriculum and tips.

Fitness Websites

www.mypyramid.gov
Check out this web site to customize a pyramid for a healthier you.

http://kidshealth.org/teen/
KidsHealth has information on a variety of healthy living topics for parent, kids and teens.

http://www.toneteen.com/
ToneTeen was created to educate kids and teens about health and fitness

Energy and Resources Websites

www.eere.energy.gov
The U.S. Department of Energy website on energy efficiency and renewable energy sources.

http://www.eia.doe.gov/kids/
The U.S. Energy Information Administration's website on energy and resources. Click on the teacher link to get grade specific lesson plans.

Healthy Lifestyle Websites

http://www.bam.gov/
BAM! Body and Mind website has tons of information to help you learn what you need to know to make healthy lifestyle choices.

http://www.readysetrise.com/
This page contains links to other Positive Thinking websites on a variety of topics.

www.MadAbout.tv

M@D*ABOUT

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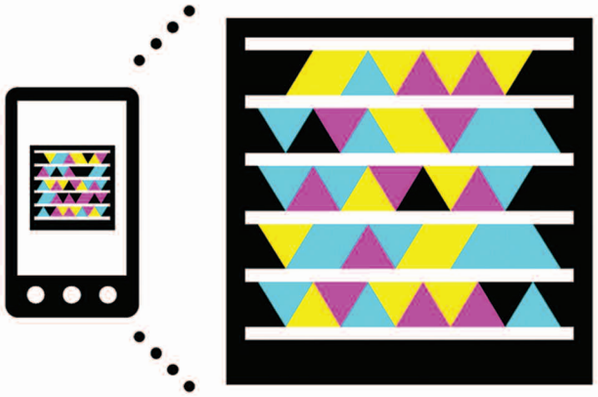

1) Download the tag reader ap for your phone FREE!

2) take a photo of the tag above with your phone

3) your phone will instantly play a M@dAbout video

Catch M@dAbout on KTLA Channel 5

KTLA 5

Saturdays at 1:30 pm

www.MadAbout.tv

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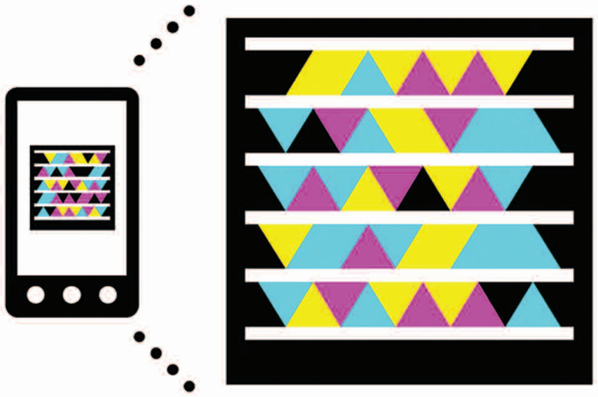

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Catch M@dAbout on WPIX Channel 11

PIX 11
WPIX-NEW YORK

Saturdays at 12:00 noon

You Tube

www.MadAbout.tv

M@D*ABOUT

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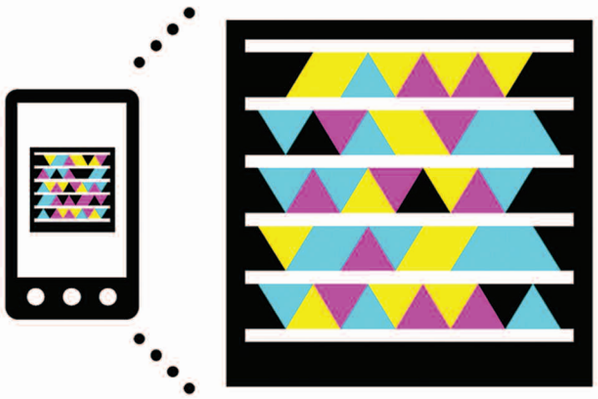

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Catch M@dAbout on WGN-TV Channel 9

WGN 9 THE CW TELEVISION CHICAGO

Sundays at 7:00 am

You Tube