



Articles in this issue:

Page 1:

- **Montessori's Planes of Development**

Page 2:

- **Magnificent Montessori Materials: Physical Science**

Page 3:

- **Tips From Teachers: Science Experiments**

Page 4:

- **Q & A: Adjusting After Montessori**

Ingrid Weland

Editor

Subscription information or to submit an article contact Editor at:

pentopaper@cox.net

(402) 502-9118

This newsletter is a monthly publication available during the school year. Subscribers may reprint the number of copies required for their school's use only.

© 2007, I. Weland

Montessori's Planes of Development

Maria Montessori compared the child to the life of a butterfly. The changing traits are not as clear in the child as they are with the insect. Each stage is like that of a "rebirth" of the child. A new stage, a different child who presents characteristics different from those he exhibited during the preceding years.

The stages are as follows:

- **Birth to six**
The first plane of development applies to the small child from birth to age six. The child of this period is like an absorbent sponge and learns from the surroundings. Many physical developments occur during this time. The child likes a sense of order, everything has a place and is returned to that place. The child is gaining independence over his environment through practical life activities. During this stage the child wants facts and reality. During this stage the environment should provide materials for the child.
- **Six to twelve**
Education at this age is not a direct continuation of what has previously been taught, although it may build on that foundation. This age child becomes more socially conscious and wants to know the reason for things. This is the stage of the reasoning mind. The child wants to know why things work the way they do and how things function. This is also the period of physical strength; the child has yet to reach puberty and adolescence. In the second plane of development the child is venturesome and daring.
- **Twelve to eighteen**
Enters this phase ready to learn and grow, eventually preparing to leave the family and become a part of society. Obvious physical as well as social and psychological changes are occurring. During this stage the young adult provides service to humanity, which can include finding their vocation. The third plane sees the child form himself as an adult.
- **Eighteen to twenty-four**
The university years when the young adult is assimilating and developing the adult personality and role mark this plane of development.

Once you know the planes of development you can better meet the needs of your child, regardless of age.



Magnificent Montessori Materials: Cultural – Physical Science

Children have a natural love for astronomy and geology. Children love things related to the earth. Early on children love to play in the sand, water and soil. First experiences come in the form of investigating – playing in a sandbox, splashing in the water. The child lives experiencing the sun and the moon on a daily basis.

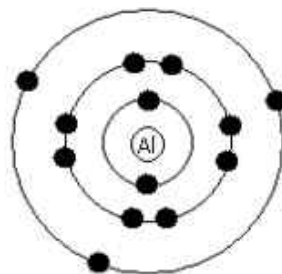
In Montessori physical science we first expose the child to rocks, sand, water... Then the child learns to name parts of the world around him – different rocks or minerals, as an example.



All of this experience and knowledge leads to a natural concern and responsibility toward the earth. This care and concern for the earth tends to lead to recycling programs or other activities the children can do to preserve the earth.

Children are introduced early on to states of matter through a lesson called, “Dance of the Molecules.” Based on scientific information, children participate in the lesson by ‘becoming’ a variety of states of matter. This initial lesson leads the children to study viscosity of liquids, the periodic table of elements, and the structure of an atom. One lesson leads to the next lesson.

One Montessori work, the Bohr Diagram (shown below), allows children to use marbles and a wooden board to conceptualize the structure of an atom. A hand-on approach leads to greater understanding of our physical world.



By convention there is color, by convention sweetness, by convention bitterness, but in reality there are atoms and space. ---Democritus

Through physical science studies the children are exposed to the world in which we live and how to care for our world.



Tips From Teachers: Physical Science

Following are some fun and interesting physical science experiments you can perform with your child.

Bendable Water

Materials needed: running water source, hard, plastic hair comb

Activity:

1. Tell your child you are going to try an activity relating to static electricity.
2. Ask your child to run the comb through her hair. (Long hair will garner faster results than shorter hair).
3. Go to the sink with water running at a slow but steady stream.
4. Place the plastic comb near the stream of water.
5. Ask your child to tell you what they see. (The water is attracted to the comb and will 'pull' towards the comb.)
6. Ask your child what interests her about the activity (the bending water, the running water).
7. Your child may want to try variations of the activity – running water that is faster or slower than the original activity.

Elephant Toothpaste

Materials needed: shallow pan, clear plastic bottle, packet of active yeast mixed with warm water in a bowl, hydrogen peroxide, food coloring, a few drops of dishwashing soap, funnel

Activity:

1. Stand bottle in shallow pan. Place funnel in opening.
2. Add 3-4 drops of food coloring to the peroxide and pour the peroxide through the funnel into the bottle.
3. Add the dishwashing soap to the peroxide in the bottle.
4. Pour the yeast mixture into the bottle and quickly remove the funnel.
5. Touch the bottle to feel any changes that take place.
6. Let the child observe what happens.

During this activity, a chemical reaction takes place, producing a gas which causes the fizzing and churns up the soap to make foam.

Experiments are an incredibly fun way for your child to discover different elements of physical science.





Questions from Montessori Parents

Q: Eventually my child will have to leave the Montessori environment. How will she adjust socially and academically? How will she adjust to her peers and teachers that expect her to do the same thing everyone else is doing?

A: Parents think ahead to how their child will do when moving to a new class, a new school, or a new environment. Children do not typically have difficulty adjusting socially. Some children need time to adjust to a new group. You can foster new peer relationships by:

- Encouraging your child to get to know their peers
- Helping to facilitate/set up social events (having a friend over, going to the park with friends...)
- Listen if your child needs to share about what is going on with friends.
- Teach your child what to do when a social event occurs. If your child is asked to play with a friend on the playground, but they are playing elsewhere, teach your child that it is appropriate to say, "I'm playing xxx right now, but I would like to play with you later." It can be hard for a child

to know how to deal with different social settings.

Academically your child will likely perform how they performed in the Montessori class. So, if the child was a slow worker, they will likely be a slow worker in a different environment.

Children are incredibly adaptable and can function in a wide variety of environments. Teachers generally report that Montessori children tend to be very driven and able to complete work on their own. That is, the teacher can present a multi-step task and the Montessori child will complete the task without multiple reminders or needing a step-by-step process from the teacher.

Students report that they are able to complete tasks assigned by the teacher but they tend to be bored, rather than challenged by the whole group setting. Students typically follow whole group class settings with little difficulty.

If you have a question you would like addressed, please email: pentopaper@cox.net. Your question may appear in an upcoming issue!

2007 is the 100th anniversary of Montessori education. How is your child's school celebrating?

Let us know how your school is celebrating 100 years of Montessori education and it may appear in an upcoming issue!

Email: pentopaper@cox.net

