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Sleep Tight, Little Learners - A Parental Awareness Project on The Importance of Sleep in Language Development and Helping Children Rest Well

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SLEEP TIGHT, LITTLE LEARNERS

A PARENTAL AWARENESS PROJECT ON THE IMPORTANCE OF SLEEP IN LANGUAGE DEVELOPMENT AND HELPING CHILDREN REST WELL



HONORS THESIS
CAMRYN STROUPE



INSPIRATION

- Directed Study with Dr. Joshua Kwekel: Caffeine and Sleep
- OBU CMDS Clinical Practicum experience
- Research + real world impact



How can

SLEEP LOSS

affect a child's

LANGUAGE DEVELOPMENT?



Poor sleep quality linked to:

- Working/long term memory issues
- Vocabulary
- Cognitive Development
- Academics
- Behavioral problems
- ADHD, aphasia, communication disorders
- Attention/listening skills

Improving sleep quality linked to improvement in these areas + more

The Importance of Parental Awareness

- Many parents unaware of sleep's impact on language development
- The data:
 - Insufficient sleep affects 30% of toddlers in the US (Hale, 2018)
 - Sleep consolidation linked to later language abilities (Dionne et al, 2011)
 - Sleep enhances precise memory in children (Gómez, 2015)
- Bottom line: many parents know sleep is important, but maybe not why it is important to child development OR may not know how to implement healthy sleep patterns for their children



THE BOOKLET

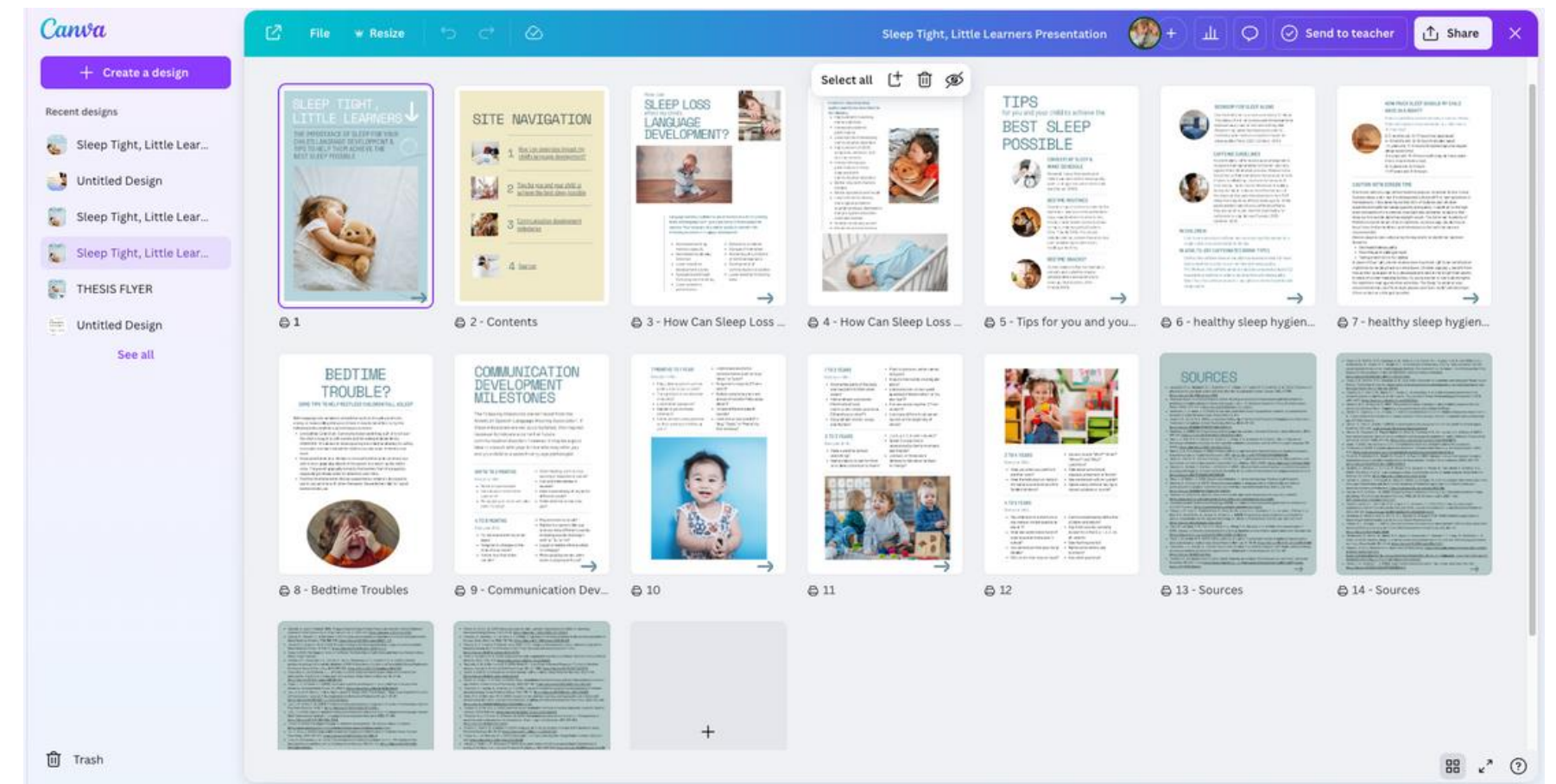
Getting valuable information into the hands of parents

DOING THE RESEARCH

CREATING THE PRODUCT

POSTING AS A WEBSITE

DISTRIBUTING THE PRODUCT

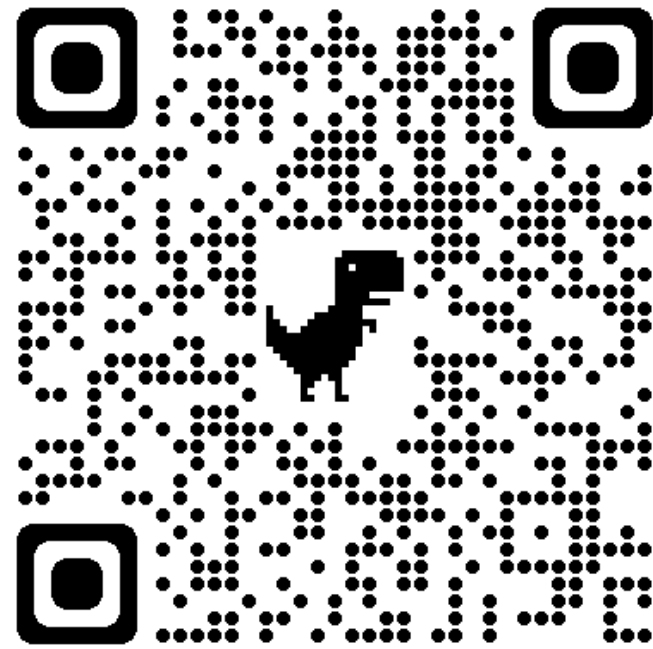




RESEARCH

IMPORTANCE OF FACT VS. FICTION

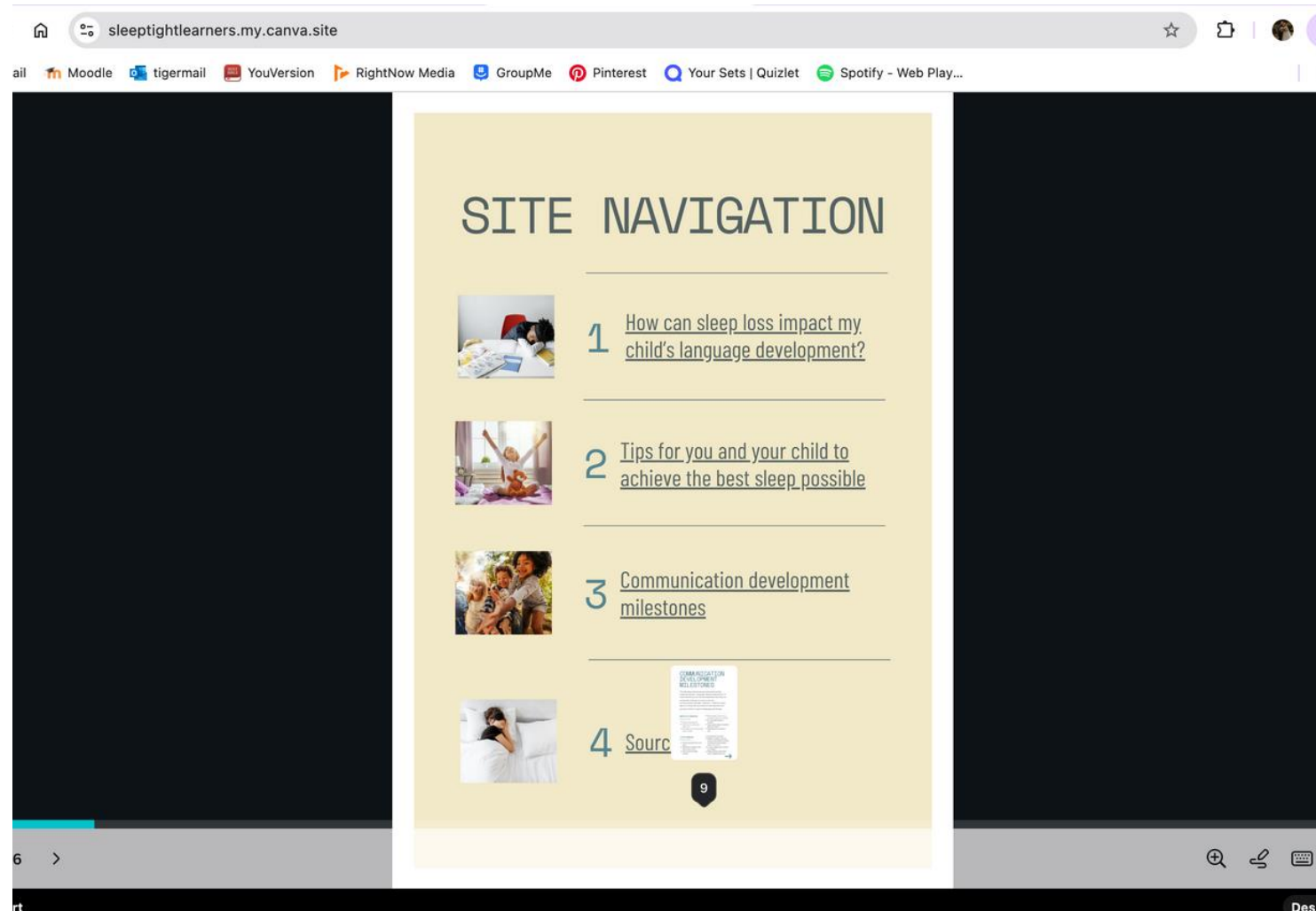
- Giving most current information to parents
 - Ex: "Sleep debt"
- Backed by research studies & expert work
- Most in-depth portion of booklet creation process



BOOKLET CREATION & CHOOSING A DIGITAL OPTION

Process, and choosing what to include

- Canva Pro for Education
- Booklet printing costs
- Turning to digital options
- Relevance of information gathered during research and consolidation for parents
- Website and flyer creation



ONLINE BOOKLET CONTENTS

SLEEP TIGHT, LITTLE LEARNERS ↓

THE IMPORTANCE OF SLEEP FOR YOUR
CHILD'S LANGUAGE DEVELOPMENT &
TIPS TO HELP THEM ACHIEVE THE
BEST SLEEP POSSIBLE



HOME PAGE AND NAVIGATION

SITE NAVIGATION



1 [How can sleep loss impact my
child's language development?](#)



2 [Tips for you and your child to
achieve the best sleep possible](#)



3 [Communication development
milestones](#)



4 [Sources](#)

How can

SLEEP LOSS

affect my child's

LANGUAGE DEVELOPMENT?



Language learning involves the use of memory in a child's growing brain, and language learning is a key factor in future academic success. Poor sleep quantity and/or quality is related to the following processes in language development:

- Decreased working memory capacity
- Decreased vocabulary retention
- Lower cognitive development scores
- Episode (event) recall from long-term memory
- Lower academic performance
- Behavioral problems
- Storage of memories
- Worsening of symptoms of ADHD and aphasia
- Development of communication disorders
- Lower attention/listening skills



In contrast, improving sleep quality/quantity has been linked to the following:

- Improvement in working memory abilities
- Increased academic performance
- Lowered risk of developing communication disorders
- Improvement of ADHD symptoms, behavior, and working memory
- Increased language performance in those diagnosed with communication disorders
- Better long-term memory storage
- Better episode (event) recall
- Lowered risk for obesity, neurological problems, substance abuse, depression, immune system disorders, and heart disease
- Greater vocabulary growth
- Enhanced precise memory



INFORMATION: HOW SLEEP AFFECTS LANGUAGE DEVELOPMENT

INFORMATION: SLEEP HYGIENE TIPS AND WHAT TO DO ABOUT BEDTIME TROUBLES

TIPS for you and your child to achieve the BEST SLEEP POSSIBLE



CONSISTENT SLEEP & WAKE SCHEDULE

Research shows that adults and children achieve better sleep quality when resting at the same times each day (Chaput, 2020).



BEDTIME ROUTINES

Creating regular actions to take before bedtime allows your mind and body to know exactly when it is time to rest. Having a predictable routine is shown to improve sleep (Mindell, 2014; Mindell, 2018). Research indicates that bedtime routines include calming activities such as reading, or bath.



BEDTIME SNACKS

Current research consensus on bedtime snacks before bedtime sleep quality (C. Mindell, 2018).



BEDROOM FOR SLEEP

Use the bedroom as a room for sleep. This allows the mind to associate the bedroom as a place of rest. Research indicates that bedrooms used for multiple purposes have a negative impact on sleep quality (Tietz, 2023).



CAFFEINE GUIDELINES

As a stimulant, caffeine activates receptors that signal sleep. Research has found that caffeine lengthens the amount of time it takes to fall asleep, shortens the amount of time asleep, increases the likelihood of waking during the night, reduces the effectiveness of the sleep, and causes disturbances in non-REM sleep that negatively affects sleep quality. While adults are less sensitive to caffeine's effects, they are not immune. See the chart below for caffeine intake guidelines (Temple, 2009; Gardiner, 2023):

IN CHILDREN:

Limit to one serving of caffeine maximum per day (the amount in a single soda), consumed earlier in the day.

IN ADULTS: (BY CAFFEINATED DRINK TYPE)

Coffee: this caffeine amount should be consumed at least 8.8 hours before bedtime in order to not interfere with sleep quality.
Pre-Workout: this caffeine amount should be consumed at least 13.2 hours before bedtime in order to not interfere with sleep quality.
Black Tea: this caffeine amount is negligible to interfering with adult sleep quality.



HOW MUCH SLEEP SHOULD MY CHILD HAVE IN A NIGHT?

General guidelines backed by research are as follows. How much sleep is most beneficial to a child over a 24-hour day?



0-3 months old: 14-17 hours (includes naps)
4-11 months old: 12-16 hours (includes naps)
1-2 years old: 11-14 hours (includes naps and regular sleep-wake time)
3-4 years old: 10-13 hours (with regular sleep-wake times, may include a nap)
5-13 years old: 9-11 hours
14-17 years old: 8-10 hours

CAUTION WITH SCREEN TIME

Electronic device usage before bedtime plays an important factor in how humans sleep, and since the widespread cultural shift to having devices in the bedroom, it has been found that 30% of toddlers and children experience insufficient sleep quantity and quality. In addition to the high brain stimulation from devices, blue light also activates receptors that keep our brains stimulated as daylight would. The American Academy of Pediatrics recommends that at nighttime, screen usage should stop at least 1 hour before bedtime, and television is not recommended.

Device usage excessively during the day is linked to:

- Decreased sleep quality
 - More frequent waking at night
 - Taking more time to fall asleep
- In place of blue light, recent studies have found that nighttime reading helps the brain wind down. In place of screen-based activities, try for nighttime reading and other activities. The American Academy of Pediatrics recommends the use of blue-light glass filters on device settings if possible.

BEDTIME TROUBLE?

SOME TIPS TO HELP RESTLESS CHILDREN FALL ASLEEP

With inappropriate behaviors at bedtime such as throwing tantrums, crying, or repeatedly getting out of bed, it may be beneficial to try the following behavioral therapy techniques at home:

- Unmodified Extinction: Commonly known as letting a child "cry it out," the child is taught to self-soothe and fall asleep independently. HOWEVER, this does not mean ignoring the child (monitoring for safety is crucial). Is meant to lead the child to cry only when there is a true need.
- Graduated Extinction: Similar to Unmodified Extinction method, but with a more gradual pullback of the parent in answering the child's cries. The parent gradually extracts themselves from the equation, responding to fewer cries for attention over time.
- Positive Reinforcement: Not as supported by research, but good to use in conjunction with other therapies. Rewards the child for "good" bedtime behavior.



COMMUNICATION DEVELOPMENT MILESTONES

The following milestones are retrieved from the American Speech-Language-Hearing Association. If these milestones are not accomplished, this may not necessarily indicate a current or future communication disorder; however, it may be a good idea to consult with your doctor who may refer you and your child to a speech-language pathologist.

BIRTH TO 3 MONTHS

Does your child...

- React to loud sounds?
- Calm down or smile when spoken to?
- Recognize your voice and calm down if crying?

- When feeding, start or stop sucking in response to sound?
- Coo and make pleasure sounds?
- Have a special way of crying for different needs?
- Smile when he or she sees you?

4 TO 6 MONTHS

Does your child...

- Follow sound with his or her eyes?
- Respond to changes in the tone of your voice?
- Notice toys that make sounds?

- Pay attention to music?
- Babble in a speech-like way and use many different sounds, including sounds that begin with "p," "b," or "m"?
- Laugh or babble when excited or unhappy?
- Make gurgling sounds when alone or playing with you?



7 MONTHS TO 1 YEAR

Does your child...

- Enjoy playing games such as peek-a-boo or pat-a-cake?
- Turn and look in the direction of sounds?
- Listen when spoken to?
- Babble to get and keep attention?
- Communicate using gestures such as waving or holding up arms?

- Understand words for common items such as "cup," "shoe," or "juice?"
- Respond to requests ("Come here")?
- Babble using long and short groups of sounds ("tata, upup, bibibi")?
- Imitate different speech sounds?
- Have one or two words ("Hi," "dog," "Dada," or "Mama") by first birthday?



1 TO 2 YEARS

Does your child...

- Know a few parts of the body and can point to them when asked?
- Follow simple commands ("Roll the ball") and understands simple questions ("Where's your shoe?")
- Enjoy simple stories, songs, and rhymes?

- Point to pictures, when named, in books?
- Acquire new words on a regular basis?
- Use some one- or two-word questions ("Where kitty?" or "Go bye-bye")?
- Put two words together ("More cookie")?
- Use many different consonant sounds at the beginning of words?

2 TO 3 YEARS

Does your child...

- Have a word for almost everything?
- Name objects to ask for them or to direct attention to them?

- Use k, g, f, t, d, and n sounds?
- Speak in a way that is understood by family members and friends?
- Use two- or three-word phrases to talk about and ask for things?



3 TO 4 YEARS

Does your child...

- Hear you when you call from another room?
- Hear the television or radio at the same sound level as other family members?

- Answer simple "Who?" "What?" "Where?" and "Why?" questions?
- Talk about activities at daycare, preschool, or home?
- Use sentences with 4+ words?
- Speak easily without having to repeat syllables or words?

4 TO 5 YEARS

Does your child...

- Pay attention to a short story and answer simple questions about it?
- Hear and understand most of what is said at home and in school?
- Use sentences that give many details?
- Tell stories that stay on topic?

- Communicate easily with other children and adults?
- Say most sounds correctly except for a few (l, s, r, v, z, ch, sh, and th)?
- Use rhyming words?
- Name some letters and numbers?
- Use adult grammar?

ASHA COMMUNICATION DEVELOPMENT MILESTONES

RESOURCES FOR ADDITIONAL INFORMATION

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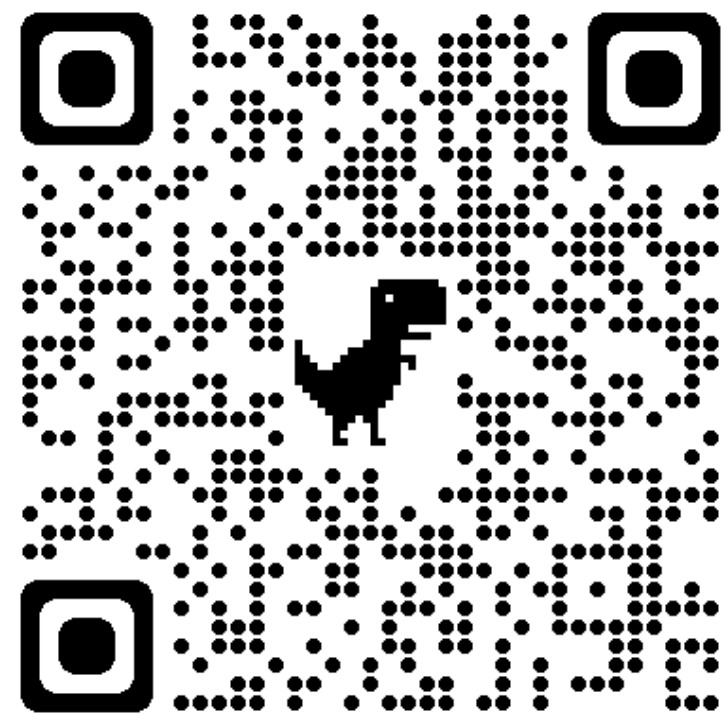
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April 16, 2025

This website was published for partial completion of a senior Honors Thesis for the Ouachita Baptist University Carl Goodson Honors Program.

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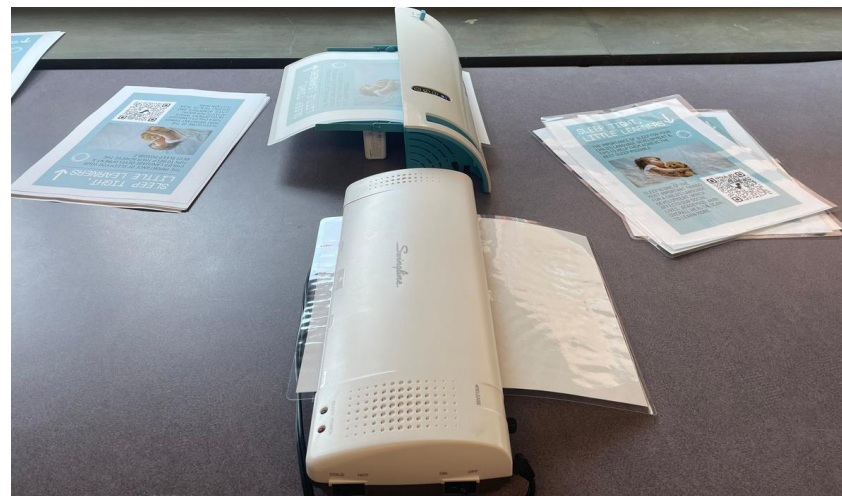
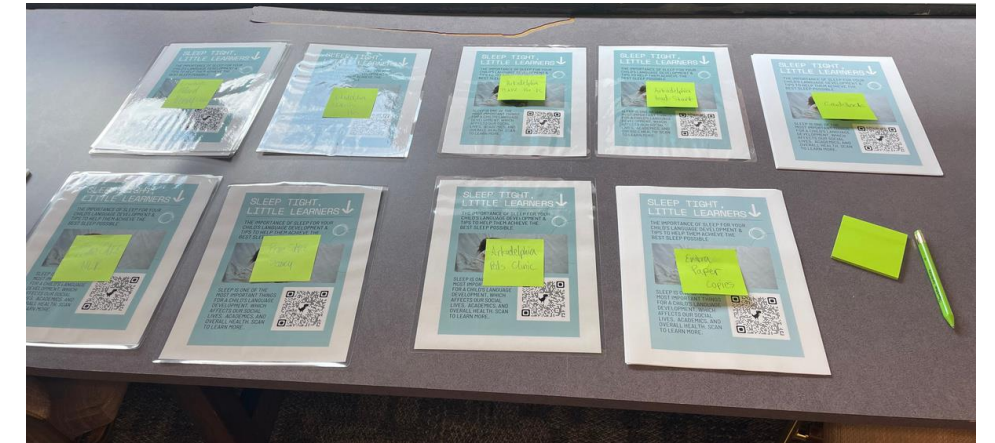




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